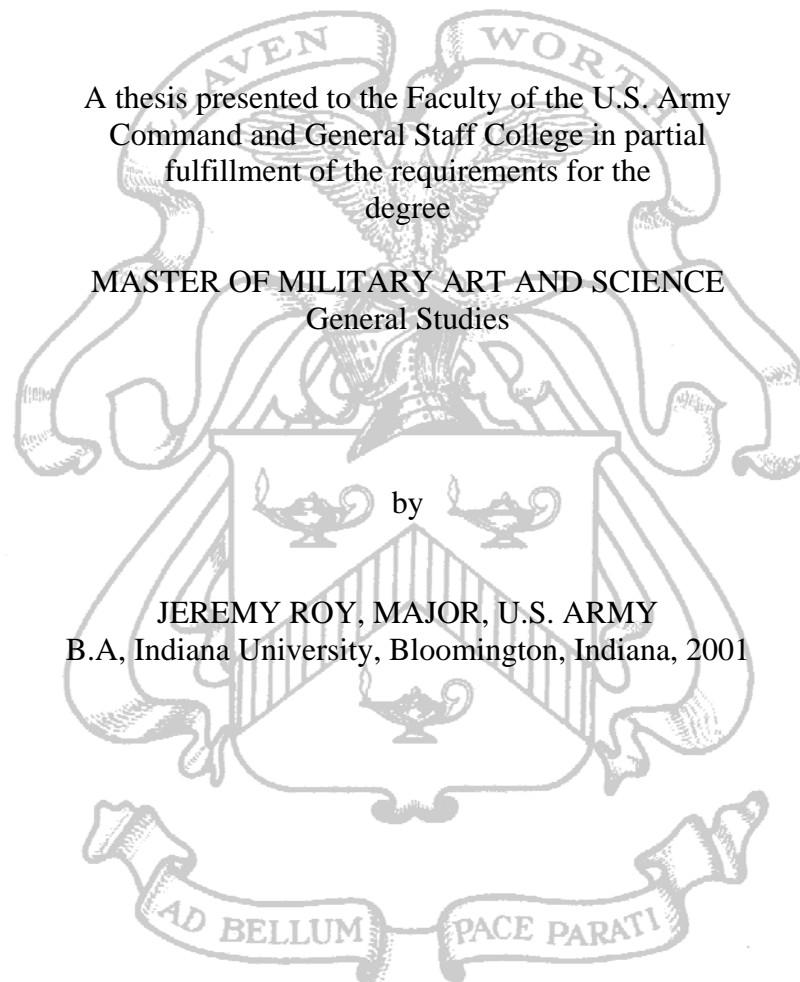


COMPREHENSIVE SOLDIER FITNESS (CSF) EXPERIMENT:
RESEARCH BIASES IN THE DEVELOPMENT OF THE CSF



Fort Leavenworth, Kansas
2013-01

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

COMPREHENSIVE SOLDIER FITNESS (CSF) EXPERIMENT: RESEARCH BIASES IN THE DEVELOPMENT OF THE CSF, by MAJ Jeremy Roy, 103 pages.

The Comprehensive Soldier Fitness (CSF) program is based on the theory of psychological resilience. The program has been cited by the psychology community as potentially ineffectual because of biases that occur throughout the research used in its development.

Biases in the basic research in sample selection, confounding variables, and measuring results were neither identified nor mitigated. Upon the approval of the CSF program, the civilian research had not been proven to be able to increase resiliency reliably and was not designed for military use. The civilian research was conducted on middle school through college age students who had been through traumatic experiences, not on deployed Soldiers in combat.

This thesis looked at the research that led to the development of the CSF and compared it against simple analytical and statistical techniques in order to determine if there were significant research biases that would keep the program from developing the resilient, “indomitable” Soldiers that the program was supposed to produce. The research showed that there were significant unmitigated biases that threaten the present CSF program’s validity.

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ACRONYMS

APS	Army Posture Statements
BCT	Brigade Combat Team
CSA	Chief of Staff of the Army
CSF	Comprehensive Soldier Fitness
EXSUM	Executive Summary
GAT	Global Assessment Tool
MHAT	Mental Health Advisory Team
MRT	Master Resiliency Trainer
NCO	Noncommissioned Officer
OIF	Operation Iraqi Freedom
PTSD	Post Traumatic Stress Disorder
UPENN	University of Pennsylvania

CHAPTER 1

INTRODUCTION

Introduction—Background

With the current pace of today's Army in its deployment cycles, time is precious to Soldiers. Whether it is free time at home or training time on the job, an American Soldier values time and actively guards it from being wasted. Most regard their time at home as a precious resource, that there is a very limited amount of it in between the deployment cycles.

With time always as a factor, Soldiers look at various Army training programs through the lens as to whether or not it is "good" training. Good in this regard refers to training that the Soldiers take a learning point or a helpful technique away from the training that helps prepare them personally or professionally. All training is subject to this criteria at all echelons, as leaders look to maximize their training with limited resources and what will give them the most efficient training, with efficient in this case meaning the fastest (easiest) method to train Soldiers to standard with the given resources.

With the Soldier's mindset reflecting these thoughts, any training that higher echelons direct as mandatory instantly becomes suspect. Most Soldiers throughout the lower ranks, specifically at the tactical level, feel that leaders at those echelons rarely have the perspective to adequately address problems down at the operational or tactical level. This sentiment is mostly because they feel that the higher echelons have been so far removed from those levels for too long, to know how those levels operate currently. One such program that Soldiers look at is the Army's Comprehensive Soldier Fitness (CSF) Program.

The CSF program is mandatory training that requires the Soldier to categorize their resiliency level. The program looks to resolve, or make the Soldier aware of, possible trends towards future behavioral health issues. This process starts with an online survey called the Global Assessment Tool (GAT) where a Soldier is asked to answer a survey that compares their quantified results to the rest of the Army in five different categories: mental, emotional, spiritual, physical, and social. Once the GAT is completed, there is a series of different lectures that are taught by a certified Army Master Resiliency Trainer (MRT) that are supposed to reinforce Soldiers in the areas that they are weak. With those two results combined, the MRT and the Soldier then determine if the Soldier requires additional training or when to seek behavioral health help.

Between deployments and other job related training, the CSF tries to resolve a growing number of mental health related issues that the Army is experiencing through a massive program to build resiliency and to help make Soldiers tougher, before deploying to the adverse conditions that they face (Casey 2011). The issues that this program wishes to address are vast, wide, and broad with the modern psychological associations disagreeing on them and how they should be treated. Issues like Post Traumatic Stress Disorder (PTSD), Moderate Traumatic Brain Injuries, and suicide are at the forefront of what was being discussed. The CSF is the latest push by the Army to address the growing problem of mental and behavioral health issues that plague Soldiers (Bowser 2011). But what if this training, designed to help Soldiers and commanders deal with some very real mental issues, is ineffective or is targeting the wrong things?

The CSF was developed by the Army following a sharp incline of 138 suicides in 2008, marking the statistic as a 28 year high (Cornum, Matthew, and Seligman, 2011;

Ruane 2011). Then Chief of Staff of the Army (CSA), General George W. Casey Jr. was alarmed by such a large increase. Suicides were not the only category where Army statistics had risen. The Army was experiencing additional claims in PTSD, with reported spousal and abuse cases on the rise as well. Casey called for a strategy that would curb these trends from growing worse.

In 2008, Brigadier General Rhonda Cornum was placed in charge of developing a comprehensive strategy for the Army as a whole. Cornum sought out Dr. Martin E.P. Seligman of the University of Pennsylvania's Psychology Department, to help design something to combat the negative behaviors associated with the distress that was perceived to cause the issues. Seligman told her that the Army did not have a stress problem, but a resiliency problem based on his current theories on resiliency and positive psychology (Cornum, Matthew, and Seligman 2011).

Dr. Seligman is a world renowned expert on positive psychology, learned helplessness, optimism, pessimism, and resiliency. He has written over 20 books and 200 articles on motivation and personality. In 1996, he was elected president of the American Psychological Association by the largest vote in their modern history. He has been promoting his work on positive psychology since 2000 and was asked to help with the development of the CSF (Ruane 2011). The CSF is based on Seligman's models and research for helping build resiliency in troubled youths who have been through traumatic experiences (Bowser 2011).

Since the program went into effect in 2009, the psychology community has been watching this program closely. There has been much criticism from other psychologists outside of the program who view the design of the CSF as more of an experiment, as

opposed to a preemptive treatment program (Ruane 2011). Previous research on resiliency, prior to this, was unable to show with any certainty that resiliency could be taught with any reliability.

Critics began to question whether or not the Army's reported success of this program is actually valid. The criticism had concerns with the closed nature and size of the population (the Army in general) and the given command structure. Concerns rose about an idea that if the successful results could just be a result of compliance and not accurate for measures of resiliency, due to the Army's methodology in gathering the data (Bowser 2012).

One criticism focuses on the methods by which the Army conducted its research and how the results were achieved. Critics of the CSF argue that the sample used in the research may not be representative enough to draw conclusions from. This is due to the involuntary relationship of Soldiers and their commanders (Eidelson and Soldz 2012).

Command is the legitimate authority the Army entrusts to an officer to conduct their mission, this includes being able to hire, fire, and punish accordingly. This authority is subordinate in nature to higher levels of command. Therefore when any Army program is introduced, it is due to a higher command's influence over the subordinate commands. The higher commands will implement a program only if the program demonstrates a high probability of success. The higher commands will define the parameters of success in each program for the subordinate commands in order to ensure that the subordinates understand the intent of the program and how to achieve successful results. The subordinate commands will support their higher chain of command by trying to achieve the criteria that the higher command has defined for success.

Because of this relationship, successful statistical results can be self-fulfilling because the subordinate command will always produce successful results as they are defined by their higher commands. This relationship could mean that these results will automatically demonstrate that the program is successful or trending toward success, at least statistically. This approach is particularly risky when dealing with mental health or other theories that do not produce any quantifiable physical outcomes and relies on its methodology to provide validity.

Scientific research is generally looking for a cause and effect relationship between the study's variables, in order to allow for further manipulations of the variables in future experiments. Determining what the causes of diseases are is essential in practicing medicine. Therefore it is increasingly important to choose the correct methodology when trying to determine a cause or to isolate a variable that is thought to be a cause. This is especially true when conducting research with an organization as complex and diverse as the Army.

Research biases occur when a particular tendency or inclination occurs, especially one that prevents unprejudiced consideration of a question (Dictionary 2005). There are three broad categories of biases: selection, confounding, and measurement biases. Selection bias results from the manner in which subjects are selected from the study population into the group of subjects from which the study data have been obtained (Lyle 2006). Confounding biases results when there is a situation in which the measure of effect is distorted because of the association of another variable factor, with other factors that influence the outcome (Lyle 2006). Measurement biases occur when there are inaccurate measurements of study variables. Sources of inaccurate measurement are:

subject error—errors within the individual for any reason, e.g. imperfect recall of past exposures; instrument error—e.g. equipment not properly calibrated, wording of question; observer error—error in use of instrument or recording (Lyle 2006). Army research and programs are often implemented without mitigation of these biases and are either doomed to mediocrity or failure, despite usually being hailed as complete successes.

Critics from the Coalition For An Ethical Psychology argue CSF's results are not as valid as the CSF claims because its research does not successfully isolate any variables and does a marginal job mitigating research biases (Eidelson and Soldz 2012). The coalition's existence is to ensure that psychology is developed fairly and ethically, away from vested interest of corporations and the government (Eidelson and Soldz 2012). The coalition is one of many organizations who criticize the CSF, as critics argue the results from the CSF it can easily become self-fulfilling, the Army has to justify the resources allocated by Congress (Eidelson 2012). The CSF reportedly has approximately 110 million dollars already invested into it, with 31 million alone going as a grant to Dr. Seligman's research (Eidelson 2012). His model was used for the CSF development (Ruane 2011). Critics of the CSF argue that there is no evidence in prior research programs as to whether or not resiliency can be taught, therefore the CSF, which has been put forth as a completed program, must demonstrate its scientific validity or being able to accomplish as a revolutionary program, what other programs could not (Eidelson 2012).

Purpose: The purpose of this study will be to look at the methods of research that lead to the development and implementation of the CSF. Within those methods of research, this study looks to determine if there are research biases (data collection,

sample selection, etc.) that were concluded to be either valid or ignored that could have affected the development or implementation of the CSF.

Issues: There are two issues when studying this topic; the first is determining the potential research biases that may exist. The documentation of sources that may exist may not address the orders and guidance that were given behind closed doors that may have mitigated some of the biases. Therefore this study will use the published reports, as they are what the rest of the scientific community sees.

Some of the reports may simply omit their methodology for brevity sake. These reports will be looked at for their relevance. If they are relative to this study, then additional research will be conducted to corroborate what the study has said.

One of the larger problems for the higher echelons of the Army is they have to produce policy for the whole of the Army. There are thousands of subcultures within the Army culture itself. Each with different training and varying resiliency factors from around the globe. Each may have different assumptions which must be taken into account as compounding variables, in order to make a comprehensive program that is able to address the Army's needs.

The initial research that was presented to General Casey from the Mental Health Advisory Team (MHATs) from 2003 to 2006 did not necessarily start out trying to determine the Army's resiliency but rather trying to gauge deployed Soldiers mental well being, with the concerns that go with that, and trying to curb the rate of suicides that were growing each year.

Dr. Seligman's own research on resiliency was also not originally oriented toward deployed Soldiers either. Seligman's programs were geared toward reducing anxiety and

depression in middle schools, high schools, and colleges (Ruane 2011). With neither set of research originally oriented on developing resiliency in Soldiers utilizing the proper methodology to gather data in order to determine if their theories were accurate for the CSF and therefore transferable to Soldiers became all that more important.

Research Questions

The primary question that will be studied, is whether or not there were any significant research biases in the research methodology that was used to develop the CSF program?

The secondary research questions are:

1. Were there any significant research biases in the Army's initial research that led senior leaders to the conclusion to develop the CSF?
2. Were there any significant research biases in the development of the GAT?
3. Were there any significant research biases in the development of the online training?
4. Were there any significant research biases in the development of the Master Resiliency Training Program?

Assumptions

1. The Army, when developing the CFP, was trying to model the success of the University of Pennsylvania's (UPENN) Resiliency Program.
2. The Army is one of the few organizations capable of funding and underwriting research of the size and scale of the CSF.

3. The Army has limited resources to use in the research and development of any resiliency program.

Definition of Terms

Chief of Staff of the Army (CSA)—Is the highest position for an Army officer.

The CSA is the proponent of all things Army. His responsibilities are Army wide and he represents the Army as a whole to the other service chiefs (Air Force, Navy, Marines), to the Secretary of Defense, and even to the President.

Cluster Sampling—Sampling conducted as groups of people rather than individuals. Cluster sampling is used primarily for administrative convenience, not to improve sampling precision. This method is used when random selection of individuals simply cannot be used. This method calls for the use of individuals as a sampling unit or cluster. These clusters are assigned randomly. This method presupposes that the population is organized into natural or predefined clusters. This method can be used when selecting individuals randomly is inconvenient or unethical. It also simplifies survey administration (Fink 2009, 54-57).

Comprehensive Soldier Fitness (CSF) Program—Is the overarching program designed to take a holistic look at a Soldier's overall well being. It has three components, the GAT, online courses, and the Army Resiliency Program. This program was designed to help alleviate the large number of mental health issues, such as PTSD and suicide, that deploying Soldiers were faced with upon redeployment.

Confounding bias—When there is a situation in which the measure of effect is distorted because of the association of other variables as factors that influence the outcome (Lyle 2006).

Control Group—In an experiment or clinical trial, a group of subjects closely resembling the treatment group in many demographic variables but not receiving the active medication or factor under study and thereby serving as a comparison group when treatment results are evaluated (Dictionary 2005).

Global Assessment Tool (GAT)—Is a mandatory online survey designed to show along the five pillars of the CSF where a Soldier would be lacking. There is mandatory resiliency training that can be required if a Soldier is deemed too low in any given area, with the exception of spirituality.

Instrument error—Equipment not properly calibrated, wording of questions (Lyle 2006).

Master Resiliency Trainer (MRT)—Is the dedicated Soldier in different levels of military units that has been to the training in the University of Pennsylvania’s Positive Psychology Program and is overall responsible for that units’ adherence to, implementation of, and subunits’ resiliency trainer.

Measurement bias—Occurs when there is inaccurate measurements of study variables. Sources of inaccurate measurement are: subject error, equipment error, and observer error (Lyle 2006).

Mental Health Advisory Team (MHAT)—Is a team of doctors chartered by the Surgeon General of the Army to go to forward theaters of war to assess behavioral health and make recommendations about the status of the Army’s mental health, while at war, to the CSA (Mental Health Advisory Team 2003).

Observer error—Error in use of instrument or recording (Lyle 2006).

Positive Psychology—Branch of psychology that studies positive emotions; building inner strengths, character, and resiliency.

Research Bias—Any effect at any stage of investigation or inference tending to produce results that depart systematically from the true values (to be distinguished from random error) (Lyle 2006). Research biases often lead researcher to claim causality falsely to the bias being unmitigated. Biases ultimately reverse the validity of a given theory as the results usually are not replicable. There are three broad categories of biases: selection, confounding, and measurement biases.

Selection bias—When subjects are selected from the study population into the group of subjects from which the study data have been obtained (Lyle 2006).

Subject error—Error within the individual for any reason, e.g. imperfect recall of past exposures (Lyle 2006).

University of Pennsylvania (UPENN)—This school's study on resiliency was closely emulated when the Army developed the CSF, in particular their Resiliency Program.

Limitations

1. Access to the developmental process as to the overall development of the CSF program.
2. The investigator has limited experience with research at this level.
3. Being able to sufficiently determine whether or not research biases occurred or not.

Scope and Delimitations

This study can only compare the methods used in the studies that were used in the research that was involved in the development of the CSF. This study looks to determine whether by its methodology the research used in the CSF development suffered from significant research biases that should have been addressed. It will not measure the overall effectiveness of the programs, only whether the research methodology should have been designed better and why.

Significance of the Study

There is great skepticism as to the validity of the CSF program (Sagalyn 2012). This study will help identify any flaws that may have occurred in the initial methodologies of the studies that would help explain the reasons for its development and validity. It is understood that there are limitations in research of this caliber; however, the Army has invested a large amount of resources (upwards of 130 million dollars) in an effort to combat what they termed to be resiliency issues. With millions of dollars of research grants at stake and only a vague area of research that was unproven at the time, it is highly probable that the research conducted, unless designed very diligently and specifically for the Army, will not actually address adequately the concerns that General Casey had. Also if the program was designed improperly, then it could very well be doing more harm than good to Soldiers. The significance of this study will show whether or not the Army has met those specific goals, or if in the interest of other things, it has only addressed the symptoms to the Army's resiliency issues, as opposed to the actual cause.

Summary and Conclusions

In summary, the CSF has a strong support from the higher echelons of the Army. With large amounts of resources already being put into it, the idea that any number of given variables that were unaccounted for, such as the design of the surveys, the sample of populations, or the lack of a control group, the CSF may only yield limited success or give the appearance of false success.

CHAPTER 2

LITERATURE REVIEW

Introduction

Purpose: The purpose of this study is to look at the methodology of research that was conducted and used when the Army developed the CSF program and to determine if there were any research biases that may affect the validity of the research that was used. This study will help determine if the program is worth the time, effort, and resources that the Army has already invested in it or if there needs to be reconsiderations due to the lack of validity to the studies.

Organization: This chapter is organized by detailing the relevant literature that was used in this study. The first set of sources that will be discussed is the Mental Health Advisory Team reports. These initial reports were what the United States Army Surgeon General has been using to frame the mental health issues for the various Chiefs of Staff of the Army. This research is important to this study because it is the baseline set of data that was presented, that caused the Chiefs of Staff of the Army to make assumptions as to what was to be done and how to address the growing mental health issues that were developing in the Army.

The second set of sources that is significant for this study is Dr. Martin Seligman's research on resiliency and positive psychology conducted outside the CSF. Seligman chronicled most of his experiences with the development of the CSF in his book *Flourish: A Visionary New Understanding of Happiness and Well-being*. This literature is important to this study because the theories that were adapted for the CSF were originally based upon this research. This study will look to see if Seligman's

research on children and teens can compare, and ultimately be transposed through the CSF, to developing resiliency of deployed Soldiers in combat zones. These studies will also help to frame the nature of the Army's problems through which Seligman's advice to the Army. In essence it is the lens through which he looked at the problems that the Army asked him to help with in 2008.

The third group of sources that is pertinent to this study is the published criticisms and its research of the CSF. This research is important to this study as they often detail the scope and methodology of the experiments and how they were conducted. This research details the methodologies, the experiments, and their findings. Those findings were then used to develop the training plan for the Army.

Resiliency and its Publications

The basis for most of the modern theory concerning positive psychology derives from the initial research from Dr. Martin Seligman. Dr. Seligman is a pioneer in the world of psychology and while he is the lead psychologist studying positive psychology and resiliency, he is also one of the few daring enough to tackle such topics. Therefore, there are relatively few researchers that do not use his theories as a basis for their own research or have too many ideas that run contrary to his research.

Seligman started out his research as a behaviorist and conducted his early work on learned helplessness. In 2008 he was sought out by the Army as an advisor to help the Army deal with different mental issues that Soldiers were having, mostly during or returning from deployments. Issues such as PTSD, depression, and suicide. Seligman helped the members of an Army council that was told to help Brigadier General Cornum develop the CSF under General Casey's direction (Ruane 2011).

His research in positive psychology includes his books *Flourish: A Visionary New Understanding of Happiness and Well-being*, *What You Can Change and What You Can't: The Complete Guide to Successful Self-Improvement*, and *Authentic Happiness: Using the New Positive Psychology to Realize Your Potential for Lasting Fulfillment* each proposes various theories in the development of the CSF.

These books and a few other publications were not only the pioneering works of positive psychology, but also describe the results of the research that Seligman was working on prior to being asked to work with the Army and what he used to develop resiliency programs in schools and colleges. These books are not only the base theories but act as corroboration for the methodology and validity of results of the CSF research. This research itself is not without its criticism and those criticisms contest the results of the CSF research. Additional literature as to how to conduct research experiments and variable manipulation will be referenced as this research looks at the potential tradeoffs that were possibly chosen because the nature of the research.

The largest body of works considered in this thesis will be the published CSF research itself. This is the research that Seligman conducted in order to develop the CSF from theory to the current training plan. This plan marks the methodology that was used in the CSF's principle theories. Likewise to go along with this research is the amassing criticism from the psychology community as a whole. Criticisms from organizations like Psychologists for Ethical Psychology and the like that are professional psychologists whose arguments run counter to Seligman's.

Finally, the last prominent set of literature that will be used is the CSF corresponding Army reports. These articles and results are what the Army used to draw

its initial conclusions about the formation of the CSF and the validity of Seligman's research on the CSF. This starts in the MHAT Reports for both Iraq and Afghanistan from 2003 and continues on until 2010. These reports were the results of statistical analysis that formed the recommendations to General Casey, the CSA in 2008. It was through a series of these reports and their conclusions that Casey based his initial resiliency problems in the Army as a whole (Carey 2009).

The Army literature will include the series of Army publications called the Army Posture Statements (APS) ranging from 2008 (CSF implementation) to 2012 (the latest results). These statements are published for Congress to show the current state of the Army (as the higher echelons see it) and things that it looks to address. The APS are the Army's statements that consistently push the resiliency ideas and their associated results not only to Congress, but to the Army leadership as a whole.

Summary

The CSF's authors were charged with the dubious task of trying to take existing clinical experiment results and develop them into a program that helps Soldiers in the areas of resiliency. The MHAT reports from 2003 to 2009 will allow this study to look at the original problem presented to the Chiefs of Staff of the Army, was it being framed correctly and accurately, as it was their foundation of facts by which they based their assumptions, when they developed the CSF. Seligman's research can be looked at through his Positive Psychology Program and series of books to determine if there are any differences between his theories and the Army's implementation that could cause research biases, such as the difference in demographics of their sampling pool. And

finally, the study will look at the CSF data from the CSF reports from 2009 to 2012 to determine if the success is self-fulfilling and reasonably valid.

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

This chapter will describe the research and how it is presented. There are a great number of things to be considered in this particular study. In order to determine if there were biases in the research that lead to the CSF development, the study must look at how the research was conducted and if that methodology was suitable for producing the desired outcome of a reduction in mental or behavioral health issues, to include suicide.

This study is a qualitative comparative study of different research methods and outputs that went into the CSF development. This study will only look at research in development of the program, its related reports (to determine additional validity), and potential biases to determine the research and reports' validity as it relates to the scientific process. In this case, it is important to remember that the initial task was to develop a program that addressed the Army's behavioral health issues as a whole. Any program to address anything Army-wide, to include the Reserves and the National Guard, is not a little undertaking to say the least.

This research is grounded with the simple idea of whether or not the design of the CSF research methodology satisfies the scientific criteria of validity, appropriate isolation of variables (whether the variables are correlation or cause-and-effect), and the reliability of the results (can they be replicated in similar studies or do they produce the same results). Failing anyone of these scientific criteria should have at the very least put a delay with any programs implementation because it should invoke the idea that there is more research required to come to a significant conclusion. In other words, the analysis

that led to the development of the CSF should have been completed prior to the CSF's implementation, otherwise the Army's program would either not be as effective as it could be or fail the Soldiers that it was supposed to be helping.

The first set of research that will be looked at will be the initial reports from the MHATs. These teams were commissioned by the different Surgeon Generals of the Army to study mental health on an Army that is deployed. Their research was the initial statistical data that was presented to the various Chiefs of Staff of the Army, who then used them to determine Army-wide policy. This study will look at their reports as to what they said to the Chiefs of Staff of the Army and the Surgeon Generals and look at their methodology as to how they found out that information and whether there were confounding variables or other biases that could skew their results.

The CSF itself was developed through a series of differing research studies. Each section: the GAT, online training, and the MRT program are made up of a number of different modules and units. Each one of these has different research that was used in their development. The added pressure of a shortened development time may contribute to unintended biases or unmitigated biases. This study will look at all of their developments and compare them to the criticisms that the psychology community has voiced against them.

The prevalent literature where most of these sources can be found are in either *Flourish*, by Dr. Seligman, as he recounts how the program was put together, or in a special edition of *American Psychologist* that is dedicated to the CSF. This *American Psychologist* edition actually has articles written by all of the doctors that were given a part in the CSF development, in which they respond response to criticisms that the CSF

was an ineffective program that was scientifically invalid. Both of these sources draw criticisms from the psychology community and those criticisms will also be compared to the articles for the biases that are mentioned.

Research Gathering

Critics of the CSF research, such as Dr. Roy Eidelson of the Coalition for Ethical Psychology, claim that there are biases throughout the research and its findings are not entirely valid, largely due to the methodologies that were used in the CSF inception (Eidelson and Soldz 2012). The first methodology that will be looked at is the methodology of the MHATs as they gathered information about behavioral health issues for deployed Soldiers, mainly in Iraq during a time of war. Each one of the MHATs reported their findings to the CSA who then took their recommendations into account. This research is important to the study in order to learn what the foundational understandings were about deployed Soldiers in Iraq prior to the development of the CSF. Looking at these reports will allow this study to understand the CSF development from the first points of recognition of the mental health issues that were reported from the beginning.

The next area that will be looked at for research biases will be the doctors' articles in both *American Psychologist* and *Flourish*. These accounts will allow this study to look at the methodology used in each of the domains', modules', and units' areas that their research is supposed to be addressing. Each of the articles details the development of their portion of the CSF in detail, or at least in significant enough detail to show how each of the sections arrived at the modules designs. Each of these areas is significant to the study because it will help determine if the areas being developed can in fact

accomplish what each of their goals are, without any significant research biases that may show skewed results or with other issues of validity. Most of the research, with the exception of the MHAT studies, was conducted outside of the Army on civilian populations, which could prove troublesome when trying to convert the program over for the use of Soldiers who are deployed and in combat.

Credibility of the Study

The credibility of this study will ultimately rely upon conclusions drawn from the comparison of the studies, to basic principles of validity in the methodologies of each level of research used in the CSF development. Did the MHATs' reports actually demonstrate the Army has a resiliency problem? Does Dr. Seligman's research and theories work for deployed Soldiers in a combat zone? Is the data collection designed in such a way as to support its own positive results without actually producing resiliency in Soldiers? In other words, does the methodology accurately get the data that is the aim of the research? This study is looking to indicate whether there were biases that probably needed to be considered in the original research prior to the implementation of a \$130 million program. Biases in the methodology that could reflect greater success in the program than there actually is or biases that would render parts of the program ineffective on its Soldier population.

Summary

This study will use a qualitative comparison of the research methodologies that were conducted for the development of the CSF and use that data to determine if the initial studies had significant research biases. The areas that will be looked at will be the

initial MHAT reports and the various research articles that were written about the CSF development.

CHAPTER 4

ANALYSIS

Introduction

After 12 years of war, many of our Soldiers suffer from the unseen wounds from combat trauma. The Army's attempt to help Soldiers led to the development of the CSF program. Thus far the success of this program has been debatable. Nevertheless, a careful analysis of the implementation of the CSF program can only lead to the conclusion that there were significant research biases in the research that was used to develop the program.

According to the Washington Post, General George W. Casey Jr., when he was the CSA, together with Brigadier General Rhonda Cornum was alarmed by growing trends in suicides (from 138 in 2008 to 163 in 2009), spousal abuse, and child abuse or neglect (cases almost doubling from 913 in 2004 to 1625 in 2009) (Ruane 2011, 1). “We need a strategy to teach people to do better and not just wait till they do badly,” Cornum recalled Casey saying to her (Ruane 2011, 2-3).

In 2008, the Army asked for the help of the UPENN to design a program that could be used to combat the growing negative trends. UPENN is home to the Positive Psychology Center with its director, Dr. Martin E.P. Seligman, who was world renowned for his work on positive psychology, among other studies of psychology (Ruane 2011, 2-3).

Seligman had designed a number of other programs in middle schools, high schools, and colleges to help young people deal with behavioral health related issues like anxiety and depression. Upon the request, Seligman began converting his program to

train Soldiers, citing that many aspects of the program for the young people remained relevant for training Soldiers (Ruane 2011, 3).

According to Casey in his article in *American Psychologist*, the CSF program is an “integrated, proactive approach to developing psychological resilience” in today’s Soldiers, their family members, and the civilian work force throughout the Army (Casey 2011, 1). The CSF was designed as an alternative approach to behavioral health treatment as the Army wanted to prevent behavioral health issues before they occurred (Cornum, Matthews, and Seligman 2011).

Prior to the development of the CSF, the Army Surgeon General commissioned a number of studies and deployed into Iraq MHATs. According to the charter of the first MHAT, the team was to assess the behavioral health issues and facilities available to Soldiers in Iraq (Mental Health Advisory Team 2003). The MHATs initially found that Soldiers deployed in a theater of war reported that they did not have adequate access to behavioral healthcare providers (Mental Health Advisory Team 2003, 12).

Upon hearing the initial MHAT reports and watching the continuing rising trends in behavioral health issues the Army decided to create and develop resiliency in the Army prior to deployment into a theater of war, in order to address these issues. Casey “wished to move beyond a ‘treatment centric’ approach to one that focuses on prevention and on the enhancement of the psychological strengths already present” in Soldiers (Casey 2011, 1).

In 2009, UPENN began teaching 150 Noncommissioned Officer (NCOs) who were designated to be the first of the MRTs (Ruane 2011, 3). The Army wanted to train upwards of 1,500 sergeants in these techniques designed to improve a Soldier’s mental

health, depression, PTSD, and suicide (Carey 2009). The MRTs were to be the highest pillar in the CSF four pillar approach to training resiliency (Cornum, Matthews, and Seligman 2011). The MRTs were selected from NCOs who were expected to have daily interactions with the individuals that they were to be training (Cornum, Matthews, and Seligman 2011, 7-8).

The individual Soldiers themselves, participate in a self assessment (second pillar) called the GAT, which is an online self reporting questionnaire, designed to measure the psychosocial well-being of Soldiers of all ranks and experience (Peterson, Park, and Castro 2011). The GAT has four domains identified as important to the CSF: emotional fitness, social fitness, family fitness, and spiritual fitness.

Following the GAT questionnaire, the Soldier will attend universal resilience training (third pillar) taught by the certified MRT. The universal resilience training will teach progressive techniques to improve resilience in oneself and subordinates (Cornum, Matthews, and Seligman 2011, 7). This process is supposed to build resilience at every level in the Army.

Upon the conclusion of the universal training, the MRTs will evaluate their subordinates GAT scores and develop individual training (fourth pillar) for that Soldier, based upon the areas that the GAT has determined that they are deficient (Cornum, Matthews, and Seligman 2011, 7). The Soldiers will be “afforded” the opportunity to improve their scores on each of the CSF dimensions (emotional fitness, social fitness, etc). Upon completion of the individual training, the Soldier’s scores and training are recorded in the Army’s Digital Training Management System, the Digital Training

Management System “will help the Army decide which programs should be sustained, expanded, or eliminated” (Cornum, Matthews, and Seligman 2011, 7).

The CSF draws significant criticism within the psychology community. George A. Bonanno, a psychologist at Columbia University remarked in an article about the CSF in the *New York Times*, “It is important to be clear that there’s no evidence that any program makes Soldiers more resilient” (Carey 2009).

If there is no clear evidence that any program makes Soldiers more resilient, then what did the Army spend \$125 million on?

One of the biggest critics of the CSF is Dr. Roy Eidelson (a clinical psychologist, past president of Psychologists for Social Responsibility, and a member of the Coalition for an Ethical Psychology), together with Marc Pilisuk (a professor Emeritus, the University of California, and professor Saybrook Graduate School and Research Center), and Dr. Stephen Soldz (a psychoanalyst, psychologist, public health researcher, and a faculty member at the Boston Graduate School of Psychoanalysis) who wrote a scathing criticism of the CSF called “The Dark Side of CSF” where they criticized the research utilized to develop the CSF. The article cites that the CSF is actually an “enormous research project of enormous size and scope, one in which a million Soldiers are *required* to participate.” The trio believed that there was no evidence that this program was going to produce resiliency and that there were significant research design flaws or biases that would produce false positive results within the program (Eidelson, Pilisuk, and Soldz 2011).

Later, in another paper titled, “Does Comprehensive Soldier Fitness Work: CSF Research Fails the Test,” Eidelson and Soldz team up again to take apart an Army first

report that claims that CSF is a success and working, by attacking the program's methodology for research. Eidelson, among many other claims, looks at the "questionable quality of the research being conducted" (Eidelson and Soldz 2012, 3).

Eidelson's and other critic's arguments about the research in the CSF being conducted have sharp issues with positive psychology and its research methods. Doubts as to the CSF validity have focused on many different facets of the research that went into the program. One of the main threats that resurfaces in different critiques is the sampling methodology that the researchers used in their study. Eidelson argues in the "The Dark Side of Comprehensive Soldier Fitness," how the researchers failed to account for a number of research biases in the study (Eidelson, Pilisuk, and Soldz 2011).

Some of the biases that he claims that the data suggests were confounding variables that were not accounted for during the research. He argues that they are significant enough to be the difference in the results and that they threaten the program's scientific validity.

He also relates that some additional biases are from the research's sample selection methodology. Sampling biases, such as when choosing who will take the survey, the samples were not adequately randomized and therefore subject to cluster sampling biases (Eidelson and Soldz 2012, 6-8). He claims that biases like these provide serious threats to the validity of the studies.

This chapter will look at various critics' claims that the sampling methods used in the studies and research used to develop the CSF, had significant research biases that should have been mitigated.

Research

Dr. Barbara Held, another critic of positive psychology, who is the Barry N. Wish Professor of Psychology and Social Studies at Bowdoin College, in her article in the *Journal of Humanistic Psychology*, quotes an earlier article by Seligman in *American Psychologist*, when positive psychology was first emerging about how “unfortunately, humanistic psychology (positive psychology) did not attract much of a cumulative empirical base” (Seligman and Csikszentmihalyi 2000, 7).

She then continues on to explain that positive psychology, particularly in its earliest forms has a distinctive problem of duality in how it is measured. She quotes the *Handbook of Positive Psychology* by Snyder and Lopez as saying:

In the excitement that may be associated with this new and invigorating approach, it may be tempting to over extrapolate so as to convey a sense of the progress that is being made. This can be even more possible when a person from the news media is almost putting words in our mouths about the supposed discoveries and advances that already have occurred. Contrary to this “breakthrough” mentality, however, science typically advances in the context of slow, incremental increases in knowledge. Therefore . . . researchers must be very careful to make appropriate inferences from their data. Claims that go beyond the data are never appropriate, and they can be especially damaging to the credibility of a new field. When one positive psychologist makes an unwarranted claim, this undermines the trustworthiness of all positive psychologists and the “movement” more generally. Accordingly, we must carefully monitor both our colleagues and ourselves. (Synder and Lopez 2002, 754-755)

Dr. Held readily agreed. In her article, this was not written to imply that all positive psychologists make unwarranted claims, but only that there is that distinct possibility that the results were not as telling of the studies successes as the positive psychologists claimed.

Dr. Held was skeptical of the results that positive psychology claimed it was achieving. She simply did not see what they were seeing. She criticized the positive

psychology movement's "alleged failure to attain scientific grounding" (Held 2004, 26).

In the context of her article, she was claiming that the positive psychologists had yet to demonstrate their scientific discoveries with any discernible or recognized scientific metric.

In her section entitled "Positive psychology's 'reality problems,'" Dr. Held explains the dichotomy in positive psychology's methodology as to why positive psychologists theorize the way that they do and what that relationship to empirical data is:

Positive psychologists stand their movement on the rock of scientific realism and objectivity when they make their truth/reality claims with all the conviction that scientific realism and objectivity warrant. But at the same time, they sometimes tout the benefits of holding beliefs that are themselves unrealistic. Although no contradiction emerges just yet, a double epistemic standard surely does: The standard of securing objective/unbiased evidence is necessary for warranting *scientific* knowledge but not *every day* knowledge, which requires only a pragmatic standard of warrant, namely, whether one's beliefs have beneficial consequences. (Held 2004, 29)

Scientific realism, as she is referring to it, is the scientific philosophy that a theory's view at the most general level described by science, is the real world independent of what one might take it to be. In other words, inside a scientific theory, the real world exists as described by the theory, independent of human perceptions. Dr. Held argues that positive psychologists hold this as their belief and therefore find empirical evidence not as necessary for the justification of their scientific theories. Therefore positive psychologists make reliable claims about unobservable attributes without large amounts of empirical data to back up their claims (Held 2004, 27-32).

The debate over positive psychology's validity as a science began in 2000 and 2001 as soon as Dr. Seligman and Dr. Csikszentmihalyi published their article in the

American Psychologist journal and made a call for positive psychology to become a separate study from other behavioral sciences. Arguments, like Dr. Held's, called into question whether or not positive psychology, which is an off shoot of humanistic psychology, could gain valid scientific traction and disassociate themselves from the previous failings of humanistic psychology to do so. She expressed her doubts and maintained that the results of any experiment would be difficult to replicate and that positive psychology was based more on subjective experience rather than objective analysis, which was required to make the studies valid (Held 2004, 29).

Mental Health Advisory Teams

In March 2003, only a few short years after the introduction of positive psychology as a separate study of behavioral psychology to the scientific world, President George W. Bush and Congress declared war and invaded Iraq. By May 2003, Bush declared an end to the major combat operations. The Army during this time saw a major opportunity to study behavioral health of Soldiers while they were deployed. The Army Surgeon General chartered the Operation Iraqi Freedom (OIF) MHAT in July of 2003 (Mental Health Advisory Team 2003, Appendix 1).

This team was to conduct a “comprehensive assessment of the OIF behavioral healthcare system focusing on the behavioral health services for deployed Soldiers and units; the evacuation of the behavioral health patients; the behavioral health services at one of the Army’s projection platforms, Fort Stewart, Georgia, home of the Army’s 3rd Infantry Division; and the observed July 2003 increase in OIF suicides and the suicide prevention program.” They determined that the best methodology to research the sources of this data was through a series of focus groups, surveying 756 deployed Soldiers (82

percent of whom reportedly engaged in combat (does not specify what the MHAT considered combat)), and visiting behavior healthcare clinics (Mental Health Advisory Team 2003, 8).

The major subordinate commands that were deployed into Iraq during OIF I were the 3rd Infantry Division (3rd ID), the 4th Infantry Division (4th ID), the 1st Armor Division (1st AD), and the 3rd Armored Cavalry Regiment (3rd ACR). The Combined Joint Task Force-Seven (CJTF-7) headquarters was established from 5th Corps (V Corps). The 1st Marine Expeditionary Force (1st MEF) was also deployed to Iraq, however remained separate from the MHAT studies (Wikipedia 2012). Despite the large number of Marines that occupied Iraq during OIF I, the Soldiers would be targets of the surveys and the focus groups.

The first MHAT report only mentions that the surveys were conducted at various base camps, but not specifically where. Iraq, during this time frame had different levels of threat, based upon what section of the country the camps were found in. In some places like the Victory Base Complex in Baghdad, there was considerably more infrastructure to protect against indirect fire attacks and other threats. Other forward operating bases were still being developed and did not offer as much protection from mortar rounds detonating in living spaces while the Soldiers slept and other such dangers at this time. Also these larger forward operating bases housed the behavioral health clinics that would be set up for the behavioral healthcare professional issues that the team was also trying to study.

The first MHAT went to various geographical regions and tried to target the units with the highest operational stress (Mental Health Advisory Team II 2005, Annex A,

A-8). However with some speculation, it is not hard to imagine that the camps the survey was administered at were probably relatively safe for visitors like the MHAT, because it is the responsibility of that camp's commander to ensure their safety. Commanders are often reluctant to take any unnecessary risks with the lives of the Soldiers who have to come in from the field, the manpower or strength required to maintain the Battlespace, and the safety of the visitors. OIF spanned the entire country of a war torn Iraq. Each part of the country was different, with different tribes, social structures, and threats. Therefore it is safe to assume that the first MHAT surveys and focus groups were conducted in places of relatively good security, and not forward into the smaller, less secure combat outposts.

Upon completion of their research the MHAT returned in December of 2003 published the results of their study and determined that their study was a cross sectional study (a study that only demonstrated where something was at that given time), was too limited in nature to determine causality, and recommended that additional studies be made (Mental Health Advisory Team 2003, Annex A, A-6). The executive summary (EXSUM) said that in its findings around Soldiers' behavioral health concerns collected through the surveys found that the healthcare system was demonstrating effectiveness in helping Soldiers. They found that Soldiers avoided behavioral healthcare because of the stigma it had. The report stated that Soldiers did not seek help as they perceived barriers to receiving that care, which was also reported in the *New England Journal of Medicine* (Hoge et al. 2004, 13-22).

Among the many behavioral healthcare system improvements that the MHAT recommended in their report, were some distinct changes to the current behavioral

healthcare strategies for Soldiers and their families. These changes included adapting an Army Suicide Prevention Program for OIF Soldiers and their units. They recommended that the units designate proponents to manage the suicide prevention program, maintain vigilance by leaders and Soldier peers, conduct suicide prevention related training, establishing a command climate that encourages the appropriate help-seeking behavior for distressed Soldiers, and continue to monitor the health and well being of the OIF Soldiers, via a survey prior to their redeployment to the continental United States and after their arrival at home station (Mental Health Advisory Team 2003).

This was the beginning of the MHATs' behavioral health research of Soldiers in OIF. Their recommendations were more a preemptive strategy that they thought could prevent future behavioral health issues. Further need for assessments of the behavioral healthcare system would push the Army Surgeon General to abide by the MHAT's recommendation and charter further teams. Their ongoing research would become a longitudinal study for the Army (a study that is conducted over a period of years) over the next eight years. The first MHAT's study also marked the standing operating procedures for future MHATs and their research methodology. Future MHATs would continue to select units and administer surveys to deployed Soldiers in the same manner as the first MHAT, in order to collect the required data for their assessments about the Soldiers' well-being and mental health.

Dr. Arlene Fink, from the University of California at Los Angeles, The Langley Research Institute, in her step-by-step book on how to conduct surveys, mentions a number of different issues to pay attention to when using surveys as a study's primary information provider, as they could potentially bias a study. The first issue outlined was

the creation of the survey itself. Potential factors included: appropriate, non-biased questions; the survey's administration; and its overall length (Fink 2009, 13-50).

To help mitigate these issues the MHAT selected an approved Soldier and theater needs assessment tool, developed by the Walter Reed Army Institute of Research. The OIF Soldier Well-Being Survey was likewise developed from other Soldier well-being surveys used in the Army over the last 10 years (Mental Health Advisory Team 2003, 10).

The second issue that she warns surveyors about is the selection of the environment that the survey is administered in. This is important because the environment can skew results of a survey by the contextual cues that they contain, thereby leaving the research's results open to questions as to the study's validity (and other possible confounding variables) (Fink 2009). An example of this would be administering a product quality assurance survey to someone in jail who was just arrested. Most could predict that their answers would probably be more negative than someone who was administered the same survey in a park.

The MHAT's movement to various parts of Iraq could in fact have had helped bias some of the survey's results based upon where the surveys were being conducted. An example of this for the MHAT's survey would be, if a platoon of infantrymen had to drive down multiple dangerous routes with possible ambushes because they were ordered to take a survey, then it is probably safe to assume that the survey does not have their full attention or that they are going to be concerned about what their results indicate. The results could show a trend that is higher or lower than the actual reality of the situation.

Another example of how an area or environment could have an effect on a survey's results would be, conducting a poll for a senator running for office in his home town and the surrounding areas. The results of the poll will probably show that voters are more likely to vote for him, when that may not be the reality of the situation.

The behavioral health assessment, OIF Soldier Well-Being Survey given to the Soldiers and conducted by the original MHAT, according to their report was not a census. A census, in this case would have data that represented every member of the population of deployed Soldier to OIF at that time. Rather the original MHAT describes their data as a "cross sectional" and uses inferential statistics to draw conclusions about the population of Soldiers deployed during OIF (Mental Health Advisory Team 2003, Appendix A, A-6). The MHAT chose to sample 756 United States Army Soldiers from different units deployed during OIF, most of whom were male (86 percent) (Mental Health Advisory Team 2003, Annex A, A-9, A-10).

The MHAT also reported that the suicide rates for Soldiers deployed to OIF from January to October 2003 were higher than the Army historical rates. The rates for that time period were 15.6 per 100,000 Soldiers per year, which was comparative to the Army's annual average of 11.9 over an eight year period. The MHAT noted that there were more deaths that did occur between July and October 2003, but they still needed to be ruled as a suicide and would be added to the statistics later.

Dr. Robert Szafran in his book, *Answering Questions With Statistics*, says inferential statistics are "a statistic that draws a conclusion about a population parameter based on data from a probability sample" (Szafran 2012, 408). The other statistic most commonly used in research is called a descriptive statistic. Conversely to inferential

statistics, descriptive statistics are “statistics that summarize the values on one or more variables for the cases in a data set and only the cases in the data set” (Szafran 2012, 407). The data that the MHAT reported using, is from a cross-sectional sample (as shown in their Annex A) from the deployed Soldiers in the OIF area of operations, and were therefore drawing conclusions about a population based on the data from their sample.

According to Szafran, with inferential statistics the focus of the statistics shifts from describing the cases that are actually present, to making statements about a population, which is evidenced by the MHAT’s recommendations in their report (Mental Health Advisory Team 2003, 6-7). He then describes that for the best results of sampling, the study must use probability sampling. Probability sampling is a “method that takes samples so that every element in the population has some chance of being selected and the probability of any particular element selected can be calculated” (Szafran 2012, 411).

Szafran goes on to remind his readers that sample statistics do not always perfectly match the population; rather they rarely match the population precisely. The difference between the sample and the census results is the sampling error. The second consideration that he gives about using inferential statistics, is that different samples from the same population often yield different results, because the elements in the sample are randomly selected (Szafran 2012, 267-268). This means that without sufficient randomization and representation, the results of a study’s statistics may not entirely demonstrate what is true for a population, as described earlier with the senator example.

With this in mind, Dr. Fink further describes common survey probability sampling techniques, to obtain the best results when administering a survey. She details the difference between convenience sampling (sampling those people that are right there,

right then) and random sampling. Despite that it is not mentioned specifically in the report, because of known major biases of convenience sampling, it is highly unlikely that the MHAT used this type of sampling technique and therefore used a random sampling method.

The most common types of random sampling methods are; simple random sampling, stratified random sampling, simple random cluster sampling, and stratified random cluster sampling. The simple random sample is described as one in which each person has an equal chance of being selected from the populace, and the population contains everyone who is eligible for the survey. While this sampling method contains the entire population, it does not equally account for any additional confounding variables. This method is best generally when looking at a single item from a population that is roughly the same (Fink 2009, 51-53).

The stratified random sampling is described as dividing the population into subgroups or strata and selecting a given number or proportion of respondents from each stratum to get a sample. This method gets a better representation of the population, but only if the strata are chosen properly. This method homogenizes the groups, and can make comparisons between those groups. Another disadvantage to the stratified random sampling is that it takes more effort than the simple sampling to conduct and often requires a larger sample size to produce statistics that are meaningful (Fink 2009, 53-54)

The next sampling method that she outlines is the simple random cluster sampling. This method, she states, is used primarily for administrative conveniences, not to improve sampling precision. This method is used when random selection of individuals simply cannot be used. This method calls for the use of individuals as a

sampling unit or cluster. These clusters are assigned randomly. This method presupposes that the population is organized into natural or predefined clusters. This method can be used when selecting individuals randomly is inconvenient or unethical. It also simplifies survey administration.

Fink notes that the disadvantages for this method are that it requires complex statistical methods to reconcile sampling units. That this method samples by clusters, but the analysis conducted is usually for individuals. This method also requires a large number of people for each cluster. This method gets very complex and requires an understanding of sampling statistics to be effective (Fink 2009, 54-56).

The final method that she mentions in her book was the stratified random cluster sampling. This method divides the clusters into strata and chooses clusters from those strata. Szafran calls this method multistage sampling. Simply put, this method is when multiple sampling methods are used. Neither Fink nor Szafran go into detail when describing this method as it is very complicated and can have any number of combinations. Therefore it is assumed that this takes the advantages and disadvantages of the other methods and combines them at various stages in the sampling process. The multistage method would also require a very distinct strata design as well as an advanced method to analyze the clusters. Both processes, when compounded together, would be complex and require an even higher level of understanding of sampling statistics, as opposed to the other simpler methods.

While the first MHAT report does not specifically outline the exact method of survey sampling used as cited by Fink and Szafran in their books, the report best describes using the multistage method. The MHAT study uses different strata within the

population to determine their samples. The strata that the MHAT outlined in their report were chosen by gender, unit type, race, rank, have children, and deployment lengths. Additionally, the sample is clustered together by both the locations of the samples pulled and by the units being used (Mental Health Advisory Team 2003, Annex A).

With this description of the MHAT's original methodology for gathering information and based upon random sampling methods, the very first MHAT report would lack precision in its estimates of the Soldiers and their needs. The results of the study would show possible major trends within the population, but would lack the empirical data to provide any specificity or causality as the sample was a cross-sectional sample as described in the report's Annex A. The results of this study would be compounded over time, combined with the results of the other MHATs' studies, and would eventually be the reports that would be presented to Army senior leader as growing trends, that would become the basis for the decision to create the CSF.

This study, however, was the Army's first attempt at determining Soldiers' behavioral health needs in an active war zone and therefore reasonable research biases and confounding variables are to be expected, as the MHAT did not necessarily know what to encounter. Likewise the MHAT would not know how their research and its methodologies would be the example for the other MHATs to follow, although the latter should have been assumed. The Army Surgeon General would use the recommendations in this report to commission another MHAT for OIF II to continue to look at the trends that were reported by the first MHAT.

The Army Surgeon chartered another MHAT team (MHAT II) in July of 2004 to act as a follow up to the original MHAT in OIF. The MHAT II charter focuses were

closely aligned with that of the original MHAT. The MHAT was to conduct another comprehensive assessment of the OIF II behavioral healthcare systems, focusing on three broad areas: the behavioral needs of the OIF II areas of operation, the behavioral health delivery system, the behavioral health training requirements for OIF II, and the implementation of the MHAT I recommendations (Mental Health Advisory Team II 2005, 3).

The MHAT II's research methodology, as described in their report, was very close in nature to the original MHAT's methodology. Once again the key assessment as to the Soldiers' well-being was the OIF Soldier Well-Being Survey and focus groups to directly obtain the Soldiers' information. MHAT II visited Kuwait, Iraq, and then proceeded to the Landstuhl Regional Medical Center in Landstuhl, Germany. Despite the Landstuhl being the last stop on the MHAT II's tour, all of the surveys and Soldier focus groups were conducted in Kuwait and Iraq.

The survey again targeted battalion level units more likely to experience combat. MHAT II detailed that samples of 20 to 25 Soldiers were drawn at company level, based on mission availability (Mental Health Advisory Team II 2005, Annex A, A-6). The sample size this time was considerably larger. Participants in the survey this time were 2,064, a large increase from the original 756.

This increase would help the precision of MHAT II's results, as they were compared against the original MHAT's findings (Mental Health Advisory Team II 2005, Annex A, A21-29). The results indicated large improvements in the Soldiers' quality of life. Only 54 percent reported that their unit morale was low, as opposed to 72 percent in the original MHAT. The MHAT found that mental health and well-being improved as a

lower percentage were screening positive for post traumatic stress symptoms (however it was still affecting at least 10 percent of the Soldiers). Forty percent of the Soldiers who reported behavioral health problems were receiving treatment compared to 29 percent from OIF I. Forty-one percent of the Soldiers reported they had received adequate training in handling combat stressors, which was a marked improvement from 29 percent in OIF I.

The suicide rate was also lower with a rate of only 8.5 per 100,000 Soldiers comparatively, to 18 per 100,000 Soldiers in OIF I. MHAT II found that there was still a stigma around receiving behavioral health care and barriers continued to prevent Soldiers from accessing behavioral healthcare. Marital and-or family issues were also still a large concern for the deployed Soldiers (Mental Health Advisory Team II 2005, 10-17, Annex A, A-4-6).

The study once again labeled itself as a cross sectional study, another snap shot of the sample at that given time. At a quick glance, it seems that the recommendations of the original MHAT had been correct. This time however, these were not the same Soldiers as were present during the invasion and OIF I. OIF II saw the arrival of III Corps into theater. The 3rd ID was replaced by the 82nd Airborne Division; the 4th ID was being replaced by the 1st ID; and the 1st AD was being replaced by the 1st Cavalry Division. The study now had a snapshot of someone else.

This meant that the 3rd ID and the other units that participated in the original surveys had now returned back to their home stations in the continental United States. Dr. Fink says that for random sampling to be consistent, the two groups must not be systematically different from each other (Fink 2009, 52). Also Dr. Szafran talks about

how if a unit of analysis (what information that the cases of a statistical unit represent) (Szafran 2012, 414) exceeds the data that was collected, the study might be committing what is termed as an ecological fallacy. An ecological fallacy is a research assumption that incorrectly assumes that what is true for the group must inevitably be true of all of the members of the group.

An example of this in the study could be, to assume that because a Soldier is a member of the Army, that all of their training levels are the same. This is obviously not true based upon unit types, Soldier ranks, and different military occupational specialties. Ecological fallacies may not be realized until after the study is completed and the results indicate the error in the assumption of who or what traits are present in the groups, stratum, or clusters.

While the MHAT II research clearly indicates an increase in the areas that they measured, there are now questions about the differences in the samples and a new number of uncontrolled or confounding variables that the report does not mention. Szafran's earlier points about sample statistics rarely match the population precisely and different samples from the same population often yield different results, because the elements in the sample are randomly selected, were seemingly unaccounted for in MHAT II's research (Szafran 2012, 267-268). MHAT II helps mitigate these biases by claiming that the sample was only a cross section of the population, and therefore only a snapshot of their focus areas. However, they provide multiple recommendations as to their observations. For these recommendations to be effective, the MHAT would have to understand the causality of the issues that they were trying to address.

While the MHAT II study is not controlled enough to determine causality, at least through the empirical evidence it presents, it can make correlations and comparisons of relationships. Likewise MHAT II's focus areas did not mention anything about determining the root causes of the various topics they were studying, only that they were being studied. So how is it that the MHATs can make recommendations to senior leaders without knowing what is causing the issues?

According to Dr. Fink, regression analysis uses correlations as the basis for predicting the value of one variable from another (Fink 2009, 82-83). In other words, it estimates the predictive relationships between one relationship and another. The example that she gives is determining whether or not students with good high school grades are more likely to have high grades in college (Fink 2009, 82). While the two variables may have a relationship, there are many different other variables that can cause a person to have good or bad grades in college. She also goes on to warn her readers that "you can use correlations to identify relationships between variables, but you cannot use them to establish causality" (Fink 2009, 82).

Regression analysis takes the number of times (frequency) an activity occurs, in this case how many times a Soldier marks the same items on a survey, and plots it over time. The results are usually a pattern of analysis that allows researchers to make claims and predictions about that pattern or trend. This analysis is used frequently in softer sciences (sciences that often calculate intangible or immeasurable variables). The MHAT II's report does not specifically state that this is the type of analysis that they used, however, looking at their statistics as they report frequency of incidents over OIF deployments, this study will assume that it was.

The MHAT II research did in fact begin to show the measured behavioral health trends better. Two different groups of units reported roughly the same types of issues. The methods that both the original MHAT and MHAT II used were roughly the same, the use of the behavioral health survey, OIF Soldier Well-Being Survey and focus groups, and they were showing the same types of patterns. This time MHAT II also had a larger more representative sample which adds to the validity of the identified trends.

MHAT III was chartered by the Army Surgeon General in August of 2005. By now CJTF-7 was redesignated to Multi-National Corps-Iraq and saw the return of V Corps back to Baghdad as the Corps headquarters. The 4th ID had returned for its second tour by the time that MHAT III was chartered. The 4th ID was joined by the 101st Airborne Division, and the 1st MEF from the Marines (Wikipedia 2013c).

As per the EXSUM in their report, MHAT III's proclaimed areas that they would be focusing on were: behavioral health of Soldiers (how does it compare to previous rotations); the behavioral healthcare system (what are the systematic factors that need to be addressed); and future focus (what are the planning and resource factors which need to be considered to care for Soldiers engaged in future deployments to Iraq) (Mental Health Advisory Team III 2005, 5).

These focus areas were similar to that of the first two MHATs as well, with the exception of the future focus. The “future focus” area was the first area where an MHAT deliberately said that they were going to try to predict future needs. The previous MHAT's called their samples cross sections, and claimed that their results were only a snapshot of the deployed Soldiers during that time, despite making recommendations anyway. This helped protect the results from external threats to their validity. MHAT

III's results now needed to empirically demonstrate a prediction of a trend. Although it is not stated, MHAT III would have to use regression analysis for their predictions, as the previous MHAT reports only showed correlations and not causality. The previous reports also looked at the frequency of the things being reported over the given deployment periods. Therefore the assumptions would have to be made based upon the previous MHAT results.

MHAT III would also report that multiple deployments were now becoming a significant factor in Soldiers' behavioral health. Soldiers that deployed multiple times were now reporting a higher rate of acute stress and family and-or personal concerns (Mental Health Advisory Team III 2005, 5-6). Multiple deployers were also reporting during the focus groups that their perception of the enemy threat was now more dangerous due to improvised explosive devices. Despite the fact that the first time deployers were in a separate focus group and had no previous deployment experience to draw from, they too perceived the enemy as being more lethal and unpredictable (Mental Health Advisory Team III 2005, 7).

A new strata that was identified during MHAT III's report was the transition teams that now fell under the Multinational Force Security Transition Command-Iraq. Transition teams were teams of senior NCOs and officers, each coming from a different war fighting function that was designed to improve the Iraqi Army leadership and their staffs. The lowest rank in most transition teams was a Staff Sergeant, making the teams senior to most other Brigade Combat Team (BCT) organizations.

The team leader could be an officer from the rank of Major to Colonel who would act as the American counterparts to their Iraqi Army leaders. The teams were small and

consisted of usually 10 to 15 members, which was barely enough personnel to crew the necessary positions in the required three vehicle convoys to get to their counterparts. Captains and Sergeant First Classes were asked to perform jobs that Specialists and Privates would normally do in a BCT. Jobs like vehicle drivers and gunners.

The transition teams also had an added danger of being in the midst of Iraqis during combat. The Iraqis shot wildly during fire fights and paid little regard to ricochets. Transition team members were encouraged to be with their counterparts as often as possible, which included being completely immersed in the Iraqi culture, whether they wanted to be or not. Often times their counterparts would not tell them no, but merely agree to something and then, just not do it. All of this was a completely different life than that of the BCT members with differing levels of stress. MHAT III would classify them as their own strata and be the first to assess their behavioral health as well (Mental Health Advisory Team III 2005, Appendix A).

MHAT III used roughly the same methodology as the first two MHATs to develop the answers to their focus areas. The data that was collected was from Soldier surveys, focus groups (Soldier and healthcare providers), provider surveys, and other data sources. The data was collected from BCTs as well as the transition teams members assigned to Multinational Force Security Transition Command-Iraq (Mental Health Advisory Team III 2005, 5). A total of 1,124 Soldiers from nine BCTs located at 13 forward operating bases throughout Iraq (Mental Health Advisory Team III 2005, 11). The Multinational Force Security Transition Command-Iraq survey data was collected from 349 Soldiers at one forward operating base and the International Zone (Mental Health Advisory Team III 2005, 1).

The key findings as outlined in the EXSUM, Soldiers were now more likely to report knowing someone seriously injured or killed or having ordinance explode near them. Forty-five percent of OIF 04-06 Soldiers reported being in life threatening situations where they were unsure how to respond, compared to 39 percent in OIF II. Deployment length and family separation remained the key non-combat stressors, with the multiple deployers reporting higher concerns about it. The personal and unit morale was similar to that of OIF I and OIF II with no significant findings. Multiple deployers, however were more likely to rate the unit morale as low (Mental Health Advisory Team III 2005, 6).

The behavioral health results had 14 percent of OIF 04-06 Soldiers endorsed screening items that indicated acute stress. Seventeen percent endorsed items reflecting a combination of depression, anxiety, and acute stress. These results were similar to OIF I. For OIF II however, the results were 11 percent for acute stress and 13 percent for the combined measure. Multiple deployers were reporting significantly higher levels of acute stress, 18.4 percent, than those on their first deployment, 12.5 percent (Mental Health Advisory Team III 2005, 6).

The suicides for OIF had increased again to 19.9 per 100,000 Soldiers. The MHAT III remarked that this was similar to the rate of 18.8 in OIF I. (Of note, the MHAT report was published in May of 2006.) The Soldiers reported that they received suicide prevention training before and during the deployments. The report said that there was a significant decline in the number of Soldiers who endorsed this training as adequate (Mental Health Advisory Team III 2005, 7).

The Soldier focus group results were published specifically in this report as well. They found that the first time deployer's focus groups reported easy access to communications, excellent dining facilities, high job satisfaction, an appreciation for behavioral health, and good access to morale support activities. Their negative aspects cited the perception that the enemy was more lethal and unpredictable with the frequent use of improvised explosive devices and that tour lengths were too long. The multiple deployers reported they were better prepared, due to improved pre-deployment training, and knew what to expect. They reported more stress on families and not enough time between deployments. They described that they had difficulty dealing with being in a defensive posture and that the overall environment was more dangerous due to improvised explosive devices (Mental Health Advisory Team III 2005, 7-8).

On more than one occasion during the EXSUM, MHAT III refers to instances where there was an increase or decrease in a statistic from OIF II, but it was comparable to OIF I. This occurred with the behavioral health results and the suicide rate. OIF 04-06 had seen the return of V Corps as the Multi-National Corps-Iraq, as well as the 4th ID as a major land component unit. Both of these elements were part of the OIF I (original MHAT) samples. Therefore it can be assumed from the results of the different reports; taking samples of different units at different times in theaters would not produce accurate trends; because there were in fact significant differences between the units. This would also mean that if the recommendations were to have any effect on the population, it was because the recommendation was correlated to an actual problem, not because the regression analysis was able to accurately predict the pattern.

By assuming that all of the Army units are the same in all respects, the MHAT was committing an ecological fallacy as outlined by Dr. Szafran earlier. If however, the MHAT would have taken the study by unit, then the results would have probably been much more accurate, or at least would demonstrate that there are differences in the units. This however would mean that the MHATs would have to choose their samples by unit and not as randomly, in order to get more accurate trends.

These trends would be briefed to the highest levels of the Army. The Army was continuing to make decisions on what they believed to be an accurate assessment of the Soldiers deployed to OIF. The Army leaders would also start to pit additional resources against the recommendations as well. In the 2006 APS to Congress, General Schoomaker (the Army CSA at that time) wrote about sending formations of Soldiers to Combatant Commanders to support civil concerns “while reducing stress on Soldiers and families” (Schoomaker 2006, 9). This is one of the first times that a theme from the MHAT reports was starting to come to the forefront of the senior leaders’ attention.

Schoomaker, in the APS was revealing the new Army Force Generation plan (or ARFORGEN). There is no evidence that directly shows the MHATs’ reports were used in its development. There are a number of similar themes from the MHAT reports that Schoomaker says about reducing stress on Soldiers and their families. He also details that there was additional attention given the Army well-being programs, to help take care of the Soldiers and their family’s needs (Schoomaker 2006, 19). The APS from 2006, with many similar themes about stress on the Soldiers and their families, seems to demonstrate that the MHAT reports and the recommendations are being used to make Army wide

decisions, although anyone around the military would be able to observe that there was an increase in stress when going to war.

In the Army, a program's importance is usually denoted by its overall priority with resources and time given to it. The importance is usually determined by the severity in nature of the issue being looked at. While it is true that there is stress and suicides while deployed and at home station, the MHAT reports would likely be what would provide the levels of severity in their focus areas, to the Army senior leaders that would base their decisions about future programs.

Following the 2006 APS report to Congress, the units of OIF once again rotated for OIF 06-08. III Corps Headquarters would now be the Multi-National Corps-Iraq headquarters. The 1st Cavalry Division would return for its second rotation along with a number of separate light brigades to accompany it. Schofield Barracks, Hawaii would send the 3rd BCT, 45th Sustainment Brigade, and the 25th Combat Aviation Brigade (CAB) from the 25th ID. Likewise from the 25th ID, the 4th BCT from Fort Richardson, Alaska would be deployed with them as well. Fort Carson, Colorado would send the 2nd BCT from the 2nd ID. The 2nd BCT, 1st ID would be sent from Schweinfurt, Germany. Finally the 2nd BCT for the 10th Mountain Division would be sent from Fort Drum, New York. The Marines would participate with the 2nd Marine Expeditionary Force (II MEF) as well. OIF 06-08 would see arguably the largest diversification of units by location yet (Wikipedia 2013c).

The violence in Iraq continued to escalate as an insurgency rose. A new strategy to fight the insurgency was formulated and was to be implemented in early 2007. From January to May of 2007, Iraq would see an influx of 20,000 more American Soldiers,

called “The Surge”. During this timeframe the units that were additionally deployed were the 2nd BCT, 82nd Airborne Division; 4th BCT, 1st ID; 3rd BCT, 3rd ID; 4th BCT, 2nd ID; 2nd BCT, and 3rd ID (Wikipedia 2013b). The Surge Soldiers would be in Iraq fighting until February of 2008. It would not be until then that the first of the Surge units would start to return to their home stations.

MHAT IV would be chartered in July of 2006. Their focus areas were to assess Soldier, and this time Marine, mental health and well-being; to examine the delivery of behavioral healthcare in OIF; and provide recommendations for sustainment and improvement to command. They conducted 1,320 anonymous surveys with Soldiers and 447 surveys with Marines. They used focus group interviews with Soldiers and Marines, as well as with Army and Navy behavioral health personnel. Additional conclusions were drawn on personal observations by the team members (Mental Health Advisory Team IV 2006, 3).

MHAT IV had 15 significant findings that were placed in the EXSUM. There were more recommendations, but the EXSUM contained the main points and themes that Army senior leaders would need to know. The report revealed that not all Soldiers and Marines deployed to Iraq are at an equal risk for screening positive for mental health problems. The level of combat is the main determinant of a Soldier or Marine’s mental health status. For the Soldiers, deployment length and family separations remained the top non-combat stressor. For the Marines, due to their shorter lengths, these were not as great of a concern. Only 5 percent of the Soldiers were taking in-theater Rest and Relaxation. Soldiers and Marines reported general resentment of the garrison-like rules in

a combat environment. Soldier morale was lower than Marine morale, but was similar to OIF 04-06 Soldier morale (Mental Health Advisory Team IV 2006, 3).

Soldiers had higher rates of mental health problems than Marines. However when matched for deployment length and deployment history, Soldier's rates were comparable to the Marines. Multiple deployers reported higher acute stress than first time deployers. The length of deployment was related to higher rates of mental health and marital problems. Good NCO leadership was the key to sustaining Soldier and Marine mental health and well-being. They report that approximately 10 percent of the Soldiers and Marines reported mistreating non-combatants, unnecessarily. Transition Teams were found to have lower rates of mental health issues compared to BCT Soldiers, although they still say that they continue to have an unmet behavioral healthcare need. Behavioral healthcare providers require additional Combat and Operational Stress Control training prior to deployment. Finally, they reported that there still remained no standardized joint reporting systems for monitoring health status and suicide surveillance of service members while deployed (Mental Health Advisory Team IV 2006, 3-4).

When addressing the suicide statistics, the report admits demographic differences between the OIF Soldiers and the Army. The OIF suicide rates from 2003 to 2006 were higher than that of the average Army population, 16.1 vs. 11.6 suicides per 100,000 Soldiers. They also draw the conclusion that the current suicide prevention training is not designed for a combat (deployment) environment (Mental Health Advisory Team IV 2006, 4).

As part of the EXSUM the key recommendations were broken into three timeframes that the recommendations should occur in: pre-deployment, deployment, and

post deployment (sustainment). The pre-deployment recommendations were to mandate that all of the Soldiers and Marines attend small group Battlemind training to help them handle stressors of combat and deployment. The next recommendation was to develop additional battlefield ethics training, based on the Army Chief of Staff's "Soldiers" Rules. The team recommended that this training use OIF based scenarios so that Soldiers and Marines would know exactly what is expected of them. The final recommendation in the EXSUM was to revise the suicide prevention program with the elements specific to OIF (Mental Health Advisory Team IV 2006, 4-5).

During the deployment the MHAT had four recommendations. They wanted to restructure the in-theater Rest and Relaxation program to ensure the Soldier and Marines deployed on base camps (forward operating bases) receive priority for filling the slots. The team also recommended sharing mental health information with the commanders in the same manner and detail that a wounded Soldier's or Marine's status is shared. The team felt that this would help with the Soldier's recognition of symptoms earlier, if their supervisors could know the Soldier's status. Next they recommended developing standardized procedures for conducting Battlemind Psychological Debriefings to replace two other briefings that occurred with a behavioral health evacuation. The Battlemind debriefing would be more specific, as to the nature of the behavioral health issue, as opposed to the standard debriefings. The last recommendation was that the commands focus behavioral health on units that have been in-theater longer than six months, which is roughly the amount of time in-theater where the majority of behavioral health issues start to occur (Mental Health Advisory Team IV 2006, 5).

In the last time frame that was given, post deployment (sustainment), the MHAT IV recommended to senior leaders that there are three additional things the Army can do to reduce behavioral health issues. The first was to facilitate Soldiers and Marines reintegration with their families and their transitions home. They also recommend that all Soldiers and Marines receive post deployment Battlemind training as well. MHAT IV remarked that an emphasis needed to be placed on junior NCO and officers' education and training, as to the important role they play in maintaining mental health of their subordinates. The final recommendation was that the Army extends the interval between deployments from 18 to 36 months, to allow Soldiers optimal time for the Soldiers and Marines to "reset" their mental health (Mental Health Advisory Team IV 2006, 5).

The Battlemind program, which was mentioned during a couple of the recommendations, was the Army's initial training program for resiliency and the predecessor to the CSF. Because a number of the materials related to resiliency, the Army went ahead and used what they could from the Battlemind program, when they converted all resiliency training over to the CSF. These items include videos, exercises, and brochures. Battlemind can be directly linked to the MHAT reports, as the Battlemind website specifically lists all of the MHAT reports as their references for the studies used.

The Battlemind program during the deployment cycle was designed for execution during the pre-deployment phases and then again following redeployment. The pre-deployment brief was an introduction that Battlemind was "a Warrior's inner strength to face adversity, fear and hardship during combat with confidence and resolution. It is the will to persevere and win" (Rinehart 2010a). The stated purpose of Battlemind was "to prepare Warriors mentally for the rigors of combat and other military deployments;" "to

prepare Warriors with the skills to assist their battle-buddy during deployment as well as to transition back home;” and “to prepare Warriors to possibly deploy again in support of all types of military operations, including additional combat tours” (Rinehart 2010a).

The pre-deployment programs were designed to discuss with Soldiers what to see, hear, and feel in Iraq. The program identified specific stressors that were identified as the most common ones reported by the MHATs. It describes what a warrior should know and do in those situations. The training emphasized what both the leaders and the Soldiers were to do in the event that they were to begin experiencing these things (Rinehart 2010a).

The post-deployment training focused on the transition from combat back to home. This training was often given at the time of redeployment to the point that some units will not release the Soldiers to their families upon their arrival home, until the training was completed. The post-deployment training reminded the Soldiers that everyone transitions from a combat zone back to home in their own way and their own time. It told them that things had changed for their families as well, since they had left, and reminded them to ease into that transition (Rinehart 2010b).

A series of studies was conducted later in 2009, which was designed to determine what the overall effect of a program like Battlemind would have on the stressors, and other symptoms that were linked to PTSD, depression, and acute stress. The results of the studies showed that there was a decrease in the overall symptoms measured. The Soldiers also had favorable reactions to the Battlemind training, which was an indicator that such a program would in fact work to reduce the stressors and the signs of PTSD and suicide (Adler et al. 2009).

The initiation of the Battlemind program trained Soldiers on the stressors of the battlefield as soon as they returned home, all the way up to the next deployment. MHAT V was chartered to be in support of OIF in October and November of 2007. A second MHAT was deployed to Afghanistan at the same time. While their reports are compiled under the MHAT V overall report, the annexes do break the reports down by theater. However the majority of the regression analysis and the comparisons that are made are being made against the OIF data.

During this timeframe, a number of the major units of OIF 06-08 and The Surge had not departed Iraq yet, such as the 1st Cavalry Division. In November of 2007 the XVIII Airborne Corps had just taken over as Multi-National Corps-Iraq headquarters and the other major units would leave Iraq in the early months of 2008.

MHAT V's methodology remained the same as the previous MHATs. Their focus areas were to assess Soldier mental health and well-being, examine the delivery of behavioral healthcare in OIF, and provide recommendations for sustainment and improvement to command. In the period of September 2 to October 23, 2,279 OIF Soldiers completed an anonymous survey (Mental Health Advisory Team V 2008, 12).

In addition to the methodology, MHAT V describes how their statistical analysis was going to work as well. They admit to the invalidated scales and the non-random sampling as part of their methodology. They describe that they are interested in an estimate. They detail that their analysis focuses on “whether responses to variables of interest are related to factors in theater such as time, number of previous deployments, or combat frequency and intensity” (Mental Health Advisory Team V 2008, 18-19).

They go on to say that their use of statistical modeling has two additional advantages. It provides a way to compare the responses over time, while adjusting for sample differences. Second, adjusted mean values can be used in figures to show differences or similarities over periods of years. They maintain that their regression model was not biased and was replicable using the Statistical Package for Social Sciences program (Mental Health Advisory Team V 2008, 19).

The Statistical Package for Social Sciences program that they were using to replicate and therefore determine the validity of their study was originally developed to conduct statistical analysis in social sciences. It is designed to do, among many other programming features, regression analysis in terms of linear regression, or frequencies across time (Wikipedia 2013c).

MHAT V's findings about Soldiers' health, morale, performance, and ethical behaviors found that there were some changes again in the trending patterns when compared to the previous MHAT reports. They found that the percent of Soldiers, who reported high or very high unit morale, was significantly higher in 2007 than 2006. The percentage of Soldiers screening positive for mental health problems was similar to 2006 and other years. Soldiers' reports of the degree to which their work performance was impaired by stress or emotional problems were significantly lower in 2007 than in 2006. There were 11.2 percent of the Soldiers that met the screening criteria for concussion (also called mild Traumatic Brain Injury-mTBI). Less than half of these were evaluated by a medical professional. Soldiers' reports of engaging in unethical behaviors were largely unchanged relative to 2006; however, they did report a significant decline in "modifying" the rules of engagement. Soldiers who screened positive for mental health

problems were significantly more likely to report engaging in unethical behaviors (Mental Health Advisory Team V 2008, 12).

The MHAT broke down their findings by new categories as well. Under the category of risk factors, which summarizes external threat questions on the previous reports, they listed that Soldiers reported a significant decline in exposure to a wide range of combat experiences relative to 2006. The decline was particularly pronounced for Soldiers in-theater for six months or less. On an unadjusted basis, Soldiers reported high exposure to a variety of intense combat events. In particular, 72.1 percent of Soldiers reported knowing someone seriously injured or killed. There was considerable variability across units in terms of combat exposure.

On a normalized basis, relative to 2006 Soldiers reported a significant decline in deployment concerns such as being separated from family. Deployment length was a risk factor for most outcomes. They found that a number of outcomes (morale, mental health, alcohol use, and unethical behaviors) show improvements in the last four months of the deployment (Mental Health Advisory Team V 2008, 13).

Even with an improvement in reports of mental health in the last months of the deployment, MHAT V anticipated that nearly three times as many Soldiers would be expected to report mental health problems at month 15, than would be expected to report problems at month one. Soldiers on multiple deployments report low morale, more mental health problems, and more stress related work problems. Soldiers on their third or fourth deployment are at particular risk of reporting mental health problems (Mental Health Advisory Team V 2008, 13).

MHAT V found that Soldiers reported an average of 5.6 hours of sleep per day which is significantly less than what is needed to maintain optimal performance. The listed reasons were: a significant risk factor for reporting mental health problems and work-related problems; officers appeared to underestimate the degree to which sleep deprivation negatively impacts performance (Mental Health Advisory Team V 2008, 13).

The MHAT labeled the preventive measure that was prescribed and measured in other MHAT reports, as protective factors. The MHAT in this category found that Soldiers' ratings of their social climate (leadership, cohesion, and readiness) were significantly higher in 2007 than 2006. Soldiers perceptions of the stigma associated with mental healthcare were significantly lower in 2007 than 2006. They also found that in contrast to stigma, Soldiers' perceptions of several barriers to care increased. These barriers that were increased were likely driven by Soldiers at command outposts who had trouble accessing mental health (Mental Health Advisory Team V 2008, 13-14).

They also found that Soldiers' perceptions of their marital quality did not change from 2006. Soldiers reported either no change or a decrease in their willingness to report a unit member for engaging in unethical behaviors relative to 2006. Soldiers now reported significant increases in training adequacy for managing the stress of deployments and for identifying Soldiers at risk for suicide. Soldiers who received pre-deployment Battlemind training reported lower mental health problems. Soldiers reported a significant increase in the adequacy of ethics training (Mental Health Advisory Team V 2008, 13-14).

MHAT V's report details their findings on suicides as such:

Since the beginning of OIF (March 2003), there have been 113 confirmed Army suicides in Iraq. The MNF-I has an active Suicide Prevention Committee, chaired by the Chief of Clinical Operations for the Command Surgeon. This has recently been augmented by an MNCI-I Suicide Prevention Board Chaired by the Corps Chief of Staff. The current suicide training program is being revamped into a more robust program, which will require further review once established to gauge effectiveness. The Automated Suicide Event Report (ASER) is being widely used in the theater by behavioral health care providers, but only for suicides/suicidal gestures by Army personnel. Although there are numerous service-specific mental health tracking systems, there is no single, joint tracking system capable of monitoring suicides, mental health evacuations, and use of mental health combat stress control services in a combat environment. (Mental Health Advisory Team V 2008, 14-15)

MHAT V recommended there be a continued emphasis on Soldier resiliency.

They recommended the continued emphasis on Battlemind training throughout the deployment cycle. They also recommended to continue targeting behavioral health, based on time in-theater, and to use Battlemind debriefings after 6 months in-theater for high combat exposure units and conducting a Unit Behavioral Health Needs Assessments after 6 months in-theater (Mental Health Advisory Team V 2008, 15).

They further recommended that multiple deployers start to rotate into non-deployment jobs. They recommended that the leadership provide NCOs who have deployed multiple times priority for Temporary Duty Assignments. If the Soldiers were not up for a change of jobs or duty station, then the leadership should provide adequate dwell-time for Soldiers, citing that research indicates that one year may not be sufficient time to reset mental health (Mental Health Advisory Team V 2008, 15).

For the lower level leaders, MHAT V recommended additional fighter management techniques and training to help reduce other enabling stressors. They recommended that leaders develop and monitor work cycle programs that provide

adequate sleep time, using the Combined Arms Doctrine Directorate on Sleep Management, and encourage Soldiers to seek treatment for sleep problems. They encouraged battalion and company leaders to read material such as the NATO leaders guide “A Leader’s Guide to Psychological Support Across the Deployment Cycle.” MHAT V believed that there needed to be enhanced training for NCOs at the Warrior Leader Course, Basic Noncommissioned Officer Course and Advanced Noncommissioned Officer Course on their role in reducing Soldier stigma through counseling and mentorship training. Other enhancements included ethics training, which would require validation as well, and that they provide recommendations for suicide prevention. Administratively, MHAT V recommended that the current suicide prevention training be tailored into suicide prevention training packages, focused on phase of deployment and aimed at building psychological resiliency.

MHAT V’s report, despite its claims of being replicable, still has the same issues with this empirical evidence as the other MHAT reports, whereas its recommendations are based on the idea that their regression analysis is not only correct, but can predict the future as well. The problem still remains that despite numerous reports over a number of years, there still has not been a significant reduction in any of the known interested variables to include suicide. The regression analysis is only able to predict future outcomes based on the data input into it. The data thus far has been inconsistent in being able to predict anything, due to a number of confounding variables and the ecological fallacy, where the researchers believe that all of the subjects in the studies are equal. As shown with earlier MHAT reports, there are many different factors that had not been controlled that actually made a significant difference in the Soldiers’ stress and suicide

numbers. Therefore the analysis by the Statistical Package for Social Sciences is only as good as the data, and while it may be replicable, the previous data has yet to be shown as accurate and therefore cannot predict future outcomes.

Creation of the CSF

By now the MHAT report findings had set a trend in results as what to expect concerning deployed Soldiers and their mental health. Following the release of MHAT V's reports and alarmed by continued growing trends in both suicides among Active Duty Soldiers and domestic and spousal abuse, General Casey was dismayed by these cases of suicide, PTSD, and domestic violence. The reports told Casey that the number of suicides had jumped from 138 in 2008 to 162 in 2009, and spousal abuse cases and child abuse or neglect almost doubled between 2004 and 2009, from 913 to 1,625. Referrals for alcohol and drug abuse had also continued to rise from 15,000 in 1999, to 22,500 in 2009, according to interviews reported in the *Washington Post* (Ruane 2011). Despite all of the MHAT recommendations, no significant improvement had been made. Casey turned to Brigadier General Rhonda Cornum to further develop a solution.

“We’ve got to have something besides the Whack-a-Mole theory,” Cornum quoted Casey as saying. “We need a strategy to teach people to do better and not just wait till they do badly” (Ruane 2011, 3).

Cornum had read Dr. Martin Seligman’s work on positive psychology and resiliency. She approached Seligman and asked for his help. In November 2008, Seligman was invited to lunch at the Pentagon with Casey (Seligman 2011, 126-127).

“I want to create an Army that is just as psychologically fit as it is physically fit,” Casey began. “You are all here to advise me on how to go about this cultural transformation (Seligman 2011, 127).

Seligman, in his book called *Flourish: A Visionary New Understanding of Happiness and Well Being*, describes the rest of his lunch with Casey. Casey told him that the key to psychological fitness is resilience and that he wanted it taught and measured throughout the United States Army. He told Seligman that he was the world’s expert on resiliency and that he was there to help the Army do it. Casey gave Seligman and Cornum 60 days to develop a program and report back to him on it. Within the next week Cornum was at Seligman’s office at the UPENN (Seligman 2011, 127-129).

Cornum and Seligman immediately began recruiting a working group to develop the CSF. The team initially consisted of five Army Soldiers and five civilians, led by Dr. Chris Peterson of the University of Michigan and Colonel Carl Castro. The first thing that they wished to create was the GAT. The GAT according its creators, was supposed to be a self-reporting questionnaire that would measure a Soldier in the four domains of resiliency: emotional fitness, social fitness, family fitness, and spiritual fitness. A physical domain would be added later. From there, the results would direct Soldiers to different training programs, either basic or advanced; to cater to the Soldier’s strengths and help them develop their weak domains (Peterson, Park, and Castro 2011, 12-3).

Global Assessment Tool

Dr. Seligman recruited Drs. Peterson and Park from the University of Michigan and along with Colonel Castro from the Army and set forth to create the assessment tool that would be used to measure where a Soldier’s resiliency levels would be at. According

to its authors, the GAT was adapted from publically available and well established psychological surveys, which already had good reliability and validity evidence. In particular, the ones with the strong associations with psychosocial fitness broadly construed. The idea was the items that were on the survey were understandable to adults in general, and that Soldiers could complete it in about an hour (Peterson, Park, and Castro 2011, 14).

The GAT is designed to probe the Soldier's strengths as well as weaknesses. Because it focused on strengths, according to Seligman, the GAT introduces a common vocabulary for "describing what is right about Soldiers". The results of the GAT, which are supposed to be confidential, are given to the Soldier and then the Soldier will be referred to other online courses or "modules" tailored to their own psychological fitness (Seligman 2011, 134-135).

The GAT was made final in the fall of 2009. All Soldiers were then instructed to take the GAT once a year, throughout their careers. The results from the GAT went to one of the world's largest databases called the Soldier Fitness Tracker. The Soldier Fitness Tracker was to provide an agile delivery mechanism for the GAT, as well as data collection and reporting capability. According to Seligman, it was built to measure, track, and assess the psychological fitness of all Soldiers, to include the National Guard and the Reserves (Seligman 2011, 136-137).

Seligman also professed that completion of the GAT was a requirement, while it still maintained the confidentiality of the individuals' scores. Commanders were to track the completion of the GAT, and the required modules. If the Soldiers did not complete

the GAT, then administrative or judicial action can be sanctioned against them (Seligman 2011, 136-137).

Criticism of the GAT argues that the domains that are being measured do not necessarily link themselves to the key stressors that cause PTSD, depression, or suicide (Eidelson and Soldz 2012, 5-7).

Dr. Eidelson writes, “Most importantly, the GAT does *not* include any validated measures that assess PTSD, depression, suicidality, or other major psychological disorders, even though preventing these disorders is a key goal of the CSF program and even though such measures are readily available” (Eidelson and Soldz 2012, 5).

So what then is it that the critics are saying that the GAT measures? Eidelson goes on to express that the GAT scores measure just that, the GAT scores. He claims that there is no sufficient evidence that shows, raising a domain’s score will improve or lessen any one of the key of stressors that cause PTSD, depression, and suicidality, which was supposed to be the results of the CSF (Eidelson and Soldz 2012, 4-6).

Other criticisms attack the fact that the GAT is not voluntary. Eidelson in his article, “The Dark Side of CSF,” reminds the people that the voluntary consent towards an experiment was derived from the Nuremberg Trials, which developed the Nuremberg Code. The code begins by stating:

The voluntary consent of the human subject is absolutely essential. This means that the person involved should have legal capacity to give consent; should be so situated as to be able to exercise free power of choice, without the intervention of any element of force, fraud, deceit, duress, over-reaching, or other ulterior form of constraint or coercion; and should have sufficient knowledge and comprehension of the elements of the subject matter involved as to enable him to make an understanding and enlightened decision. (Eidelson, Pilisuk, and Soldz 2011)

The GAT is anything but voluntary as demonstrated by the requirement to fill it out every year of a Soldier's career. Previous punishments from not completing the GAT have been as bad as refusing to process any additional requests or conducting any additional administrative actions until the GAT is completed. This would include having a Soldier's orders delayed, their evaluation reports would not be processed, or their awards would not be submitted. If a Soldier was about to submit a packet for a promotion board, all of these things are usually required to be up to date before the submission deadline for the convening board. Withholding such administration until the GAT is completed could cost a Soldier a promotion to the next level or worse.

Eidelson argues that this alone could throw off the results. General Odierno, the most current CSA, in his address to the Command General Staff College on April 10, 2013, offhandedly admitted "that Soldiers will take advantage of any gap that you give them. It's natural" (Odierno 2013).

What the CSA was alluding to, was the tendency for Soldiers to find a way to get something done, with the littlest amount of work possible, especially if the leadership is not checking on it. This tendency is because there is usually more to do than what Soldiers have time to accomplish, so they place a priority of effort on things they consider more important. This tendency is well known throughout the Army and has spawned a number of axioms for the leadership like President Reagan's famous quote, "Trust, but verify" which is widely used when assigning tasks (Wikipedia 2009).

This idea would arguably be no different with the GAT as well. It is reasonable to assume that the success of the GAT and thereby the CSF, is based upon the idea that the Soldiers themselves are committed to becoming more resilient. However, based upon the

tendency that Odierno mentioned, as the completion of the survey is mandatory then it is reasonable to assume that the Soldiers will comply with that directive, only so much as to not garner any additional work.

Soldiers will be aware that there is additional training required following a Soldier's responses. There will be either basic or advanced training. While it is unclear as to whether or not there is a stigma surrounding the titles of being basic or advanced, it is not unreasonable to assume that no Soldier would not want to be considered advanced, unless of course, the advanced course has considerably less work associated with it. With these outcomes in mind, a Soldier who is being compelled to take the GAT would probably look to answer it so that their performance is not being punished (i.e. having to do additional resiliency training on top of their other responsibilities) for answering truthfully.

An example of this type of behavior is demonstrated when a Major, who typically has at least 10 years in service, begins to in-process at Command General Staff College at Fort Leavenworth, Kansas. Part of the in-processing is a behavioral health station that has the Majors fill out a quick questionnaire and asks them about their current levels of behavioral health. If a Major answers the questions in a certain way, then the behavioral health provider will screen the questionnaire and automatically schedule the Major for an appointment with a behavioral health doctor. These appointments are scheduled at the doctor's convenience rather than the students' and may run into other already arranged in-processing appointments, like the delivery of the Major's household goods from the moving company. The Major cannot complete in-processing, which is accountable to a higher command, until all of the behavioral health appointments are completed. After a

couple of days, to spare their fellow Majors the inconvenient and frustrations of this process, the word gets passed to the other incoming Majors as to what questions need to be answered and how in order to pass the screening without having to schedule an appointment. The screening process is similar to the GAT in this way.

Another criticism of the GAT is how it compares its results. The GAT makes for no differences in rank, training, or frequency. The GAT looks at the Army as whole and compares it as a whole as well. For example a Major General who is in command of a Division (roughly 25,000 people) has his score compared to that of a Private who is a cook. One could easily see that being responsible for a Division would compare differently than being on a serving line in a dining facility handing out food. Also to this point, there are also more Privates and junior enlisted members than there are senior enlisted, warrant officers, and officers. This would mean that the average GAT score would compare more closely to them, than that of the General Officer who has been in the Army for over 25 years. This comparison however is often made to determine what the next level of training is for everyone in the military. Then according to the GAT scores, General Officers may be found to be less resilient than junior enlisted Soldiers, which is arguably false on that principle alone.

Online Modules

The next level of training that Dr. Seligman refers to is the online courses. The online courses are broken down by the pillars as well: emotional fitness module, social fitness module, family fitness module, and spiritual fitness module. Depending on the Soldier's score on the GAT, they might have to complete one or all of these courses to help improve their resiliency (Seligman 2011, 137-152).

The first one that Seligman mentions is the emotional fitness module. Dr. Sara Algoe and Dr. Barbara Fredrickson, in their article in *American Psychologist*, show their thought process as to how they designed the emotional fitness training module. This module was supposed to show Soldiers how to leverage their emotions to their advantage. They characterize how emotional experiences can lay the tracks for other emotional experiences. Those other experiences can then trigger downward or upward spirals (Algoe and Fredreickson 2011, 35). This analysis is consistent with what the MHATs were reporting with the multiple deployers, as to how they would experience acute stress faster than the first time deployers.

The article cites that “the science of emotions thus suggests that, in addition to reducing the frequency and duration of negative emotional experiences, for optimal mental and physical health, attention must also be paid to increasing the frequency and duration of positive emotional experiences” (Algoe and Fredreickson 2011, 36). The emotional fitness module, by their design, should work to improve the following: more flexible responding in the face of threat, better problem solving skills, faster wound healing, greater empathic accuracy, better interpersonal relationships, increased meaning in life, increased success, increased wealth, decreased mental illness, increased mental health, increased physical health, and longer lives (Algoe and Fredreickson 2011, 38).

Algoe and Fredreickson’s approach to accomplishing this was to build a range of skills in order to develop habits of the mind. The first phase in the training is to dispel myths about emotions. The first myth is that emotions are not “soft” or to be ignored but are to be functionally adaptive. The training looks to increase the understanding of what role emotions play in everyday life (Algoe and Fredreickson 2011, 38-39).

The second phase of emotional training is to encourage emotional regulation. This is the idea that Soldiers deal with their emotions appropriately within time. This concept is to help Soldiers regulate their emotions by identifying the source and impact of that emotion. They offer that another reason is because teaching Soldiers how to control their emotions can be used as a preventive approach to emotional wellness (Algoe and Fredreickson 2011, 39).

The third phase calls for the optimization of the “emotional landscape for self and others.” According to their article, this phase is supposed to maximize the impact of the entire emotional fitness endeavor. This phase is supposed to teach Soldiers how to create and grasp their own opportunities to develop their own positive emotions that best fit them and their environment. This phase also shows how an individual’s behavior or emotions can affect others around them (Algoe and Fredreickson 2011, 39).

Criticisms of this module stem back to Dr. Held, as she contended that both the positive and negative psychology were needed to work together. She cites studies whose results show that pessimistic older people were less likely to be depressed (Held 2004, 16-18). Dr. Eidelson also maintains that negative emotions were much like pain, in which they were natural reactions to a stimulus that was designed to tell us that there was something wrong. Teaching a Soldier to look for opportunities to be positive could cause them to ignore that stimulus that causes the persistent dread (which is a cue to the brain that there something wrong and possibly dangerous in the environment) that is felt when there is an actual life or death situation. He points out that careless stimulation of those cues could in fact, have a potentially harmful reaction (Eidelson and Soldz 2012, 8).

The next online module that Seligman discusses in *Flourish* is the family fitness module. He contends that because of the high levels of effective communications, that “Soldiers are virtually in the presence of both the comforts and, unfortunately, the thorns of home life.” He says that these thorns are major causes for depression, suicide, and PTSD in Soldiers. He cites as an example that the majority of suicides by our Soldiers in Iraq involves a failed relationship with a spouse or partner (Seligman 2011, 142).

In their article in the CSF themed *American Psychologist*, Dr. John Gottman, Dr. Julie Gottman, and Dr. Christopher Atkins relate how they developed the family skills component. They discuss the results of the increased communications that Soldiers can feel the presence of their partner in-theater, while at the same time impacted by their separation from them. They claim that results of this dynamic are a strong sense of ambiguous loss. With that, both the Soldiers and their spouses feel exhausted and have reoccurring guilt over that loss (Gottman, Gottman, and Atkins 2011, 53).

With this in mind, the family fitness module looks to teach a variety of critical skills for Soldiers when dealing with their families. The module looks to show Soldiers how to create and maintain trust, safety, and a secure attachment while maintaining friendship and intimacy. The module looks to help Soldiers find a creative outlet for the times that they are dealing with their emotions and not to take it out on their family. They recognize that there will inevitably be relationships that dissolve, the module teaches coping techniques for those situations as well. They discuss positive child rearing techniques and how to keep the children from the negative effects of the loss. They stress, in their article to implement this as early as possible (Gottman, Gottman, and Atkins 2011, 52-55).

Out of all of the articles, this domain draws the least amount of criticism. This is perhaps because Gottman points to years of research on healthy family practices that are being used in the behavioral health clinics already. With these practices there are decades of research that has already helped to confirm them.

The next module mentioned in *Flourish* is the social fitness module. This module was created from the works of Dr. John T. Cacioppo. Seligman describes Cacioppo's work on social resilience as "the capacity to foster, engage in, and sustain positive relationships and to endure and recover from stressors and social isolation" (Seligman 2011, 144). Simplistically he says that it is the glue that holds groups together, provides a purpose larger than the solitary self, and allows entire groups to rise to challenges. He denotes that we are not that impressive physical animals and therefore depend on each other for survival.

In the article in the *American Psychologist*'s special issue on CSF, Cacioppo together with Dr. Harry T. Reis from the University of Rochester, and Dr. Alex J. Zautra from Arizona State University describe how humans, as a social animal, need to develop characteristics of relating to each other. They give examples that agreeableness, trustworthiness, fairness, and compassion are these types of characteristics as well as others.

Another characteristic of social resilience that they describe in the article is developing interpersonal resources and capacities. By this they mean being sharing, attentive, and being empathetic or basically communicating your care for others. The last area that they talk about is developing collective resources and capacities. They argue

that this will give them: group centrality, cohesiveness, tolerance, openness, and rules for governance (Cacioppo, Reis, and Zautra 2011, 44-48).

To develop these, they claim that there are nine personal resources that foster this kind of social resilience. They claim that the traits that they found are: capacity and motivation to perceive others accurately and emphatically, to feel connected to other individuals, to communicate care and respect to others, to perceive others' regard for the self, to have values that promote the welfare of self and others, to have an ability to respond appropriately and contingently to social problems, to express social emotions appropriately and effectively, to have trust, and to have tolerance and openness (Cacioppo, Reis, and Zautra 2011, Table 1, 47). They go on to say that large units, such as neighborhoods, communities, and combat battalions are defined both by their places and the overall mutual interests. They emphasize that a key component of those aspects is trust.

Looking at the Army as such a large unit, the trio developed their module with four 15 minute modules that develop the nine personal resources outlined above. Each module will draw on more than one resource; they designed them to stimulate awareness of the other resources as well. An example is, one of the obstacles to effective social resilience is to view yourself as different from the others. Therefore the second module is designed to address these obstacles and illustrate how these differences can make a group stronger (Cacioppo, Reis, and Zautra 2011, 49).

Dr. Cappioppo and his associates, unlike most of the other research used in the development of the CSF, went ahead and cited their own limitations for their research. They said that the nine personal resources were built using other research and had at least

four significant limitations to its use in the CSF. The first limitation is that that modules provide information about social resilience, but the educational and computerized nature, they claim, precludes implementation of real life social interactions within the modules. The second limitation is that the modules represent a form of transitional research. They say that this form of research is more likely to succeed if there were randomized controlled studies and an evaluation. The third limitation is that social resilience is a multilevel construct and the computerized nature of the modules only fit the individual level. In this case it is the individual Soldier taking the CSF. The final limitation that they diagram is that a shift in the statistics, toward an increase in social resilience with the troops, does not imply any real growth in social resiliency (Cacioppo, Reis, and Zautra 2011, 49-50).

Following the social domain, the last one (and the most controversial one) that Dr. Seligman mentions is the spiritual fitness domain. Seligman talks about in *Flourish* that the Army does indeed want its Soldiers to answer to a higher moral order, so that their missions will be frequently carried out ethically. For the second reason, Seligman says that there is evidence that a higher level of spirituality has been shown to be linked to a greater wellbeing. He offers that the Army takes no stand on any religion and therefore the CSF delivers spirituality not on a theological level, but a human one (Seligman 2011, 149-151).

Dr. Kenneth I. Pargament and Colonel Patrick J. Sweeney, in their article in the *American Psychologist*, about their development of the CSF spiritual fitness modules, claim in the opening paragraphs that spirituality is a significant motivating force, a vital resource for human development, and that spirituality is a struggle that can either lead to

a Soldier's growth or decline. They maintain that the module was developed with the idea of spiritual fitness in reference to humanistic traits and not theology. They maintain that some of the key components to any religion are also the key components to a Soldier's existence. They cite a Soldier can have a search for truth, self-knowledge, a purpose in life, and direction in life as other group members may define it. These are all things that can provide a vital motivating force that helps realize dreams, goals, aspirations, and one's self awareness. The duo likens this to the Army's currently ongoing campaign about Soldiers developing and realizing their "Warrior Ethos" or fighting spirit and its necessity in order to accomplish the Army's mission (Paragament and Sweeney 2011, 58-61).

For the development of the CSF, the spiritual fitness module looks at Sweeney's model for the development of the human spirit. From this model they looked to conceptualize an individual's spiritual core as it forms the foundation of the human spirit. The Sweeney model lists several factors that are important to the understanding and therefore growth of the human spirit. Those factors cited are: self-awareness, sense of agency, self-regulation, self-motivation, and social awareness (Paragament and Sweeney 2011, 61). From this they broke the module down into three different tiers.

The first tier is designed to build self-awareness and the human spirit. There are five education modules that focus on teaching Soldiers to identify what they believe fundamentally, to include their passions, skills, strengths, and weaknesses. Then the Soldiers are to develop a spiritual development plan. The intent of the modules is supposed to be a promotion of a Soldier's own "self -awareness and a sense of ownership in the spiritual journey" (Paragament and Sweeney 2011, 62).

The second tier is supposed to build awareness of resources to cultivate their spirit. The modules here are supposed to help make the Soldier aware of different resources that they can use to implement their spiritual development plan. This tier is broken down into five modules as well. The topics that are covered in this tier are how stress affects their spirituality, how to make or interpret meaning from difficult life circumstances, how to use rituals to help Soldiers live out their core values, other ways a Soldier can seek out support for their human spirit, and finally the Soldiers are introduced to the value of “contemplation as a way of getting in touch with core values and finding greater meaning and purpose within themselves and the world” (Paragament and Sweeney 2011, 62-63).

The last tier in the spiritual fitness module has to do with building awareness for the human spirit of others. These modules are designed to help Soldiers develop deeper connections with others. This includes ethnic, cultural, and religious groups that may be unfamiliar or a source of great misunderstanding (Paragament and Sweeney 2011, 63).

Despite all of the articles, the spiritual domain is still the most controversial domain. Critics believe that it does push a religion in the sense that there are unseen, higher authorities to answer to. Jason Leopold, who is an investigative reporter for *Truthout*, in his article entitled “Army’s Spiritual Fitness’ Test Comes Under Fire” best articulates the majority of the prevalent arguments and concerns voiced on the spiritual domain portion of the CSF. The article outlines the idea that there is “remedial training” for Soldiers whose GAT scores are low in any portion of the assessment, however the spiritual portions of the GAT do not take into account the variety of spiritual beliefs. This means that anyone who takes the GAT and is not in line with how the GAT sees

spirituality, then those Soldiers will automatically receive a lower scores and remedial training (Leopold 2011).

According to the article, Brigadier General Cornum has defended the domain by proffering up the CSF definition of spiritual and how it contrasts to the definition of religious. Likewise she is quoted as reminding the readers that the spiritual domain is supposed to be optional to Soldiers, and a Soldier can choose to do those portions of the training. Critics argue that the Soldiers are free to not take the training, much like the GAT is a voluntary survey given to willing participants (Leopold 2011).

Master Resiliency Training Program

The spiritual domain was the final aspect of the first two components of the CSF individual training. The final area of major research that significantly contributed to the development of the CSF is held in the Master Resiliency Programs and with the MRTs. The MRT program is the collective training taught to the MRTs for them to train their Soldiers.

According to Seligman, the original class material and structure for the Master Resiliency Programs was written for civilian teachers. In February of 2009, he and Cornum were ordered to tackle the large uphill challenge of converting that material over to something that the sergeants can use to train their Soldiers on resiliency. Dr. Karen Reivich, who was UPENN's number one master trainer, was put in charge of "militarizing" the courses. Over eight months, Reivich and her staff met with more than 100 Iraq and Afghanistan veterans and combed through the courses (Seligman 2011, 163-167).

The training consisted of approximately 150 Soldiers a month going to UPENN for 10 days (Reivich, Seligman, and McBride 2011, 25). The training was “simulcast” to different posts where additional UPENN trainers were stationed. The first five days of the training provided sergeants firsthand experience at practicing their new skills, usually in their own lives with their Soldiers, superiors, and families. They would attend a group session with Reivich who would present the core contents of the training, demonstrate its uses, and lead the discussions. The sergeants would then break down into smaller groups and would practice their training and conduct role playing.

Following the first five days, the sergeants receive the materials they will use to teach the Master Resiliency Programs back at their units. They then spend the next three days preparing for those lessons and acquiring a full depth of knowledge on each of the topics. They are required to work through a series of activities. The content of the training was divided into three parts: building mental toughness, building strengths, and building strong relationships (Seligman 2011, 163-167).

Reivich, in her article in *American Psychologist*, describes the first module whose purpose was to teach the fundamentals of resiliency and to discuss its common misconceptions. The sergeants learn what resiliency is actually made out of and what the misconceptions associated with it are. The sergeants are introduced to the course’s six “core competencies”, which are: self-awareness, self-regulation, optimism, mental agility, character strengths, and connections as they relate to relationships.

The second module that Reivich discusses begins the first theme in the MRT course, building mental toughness. In this module, the sergeants learn to take the core competencies and increase them (Reivich, Seligman, and McBride 2011, 27-28).

According to Seligman in *Flourish*, the first skill is to identify thoughts that are triggered by an event. The training uses Albert Ellis's ABCDE model: C (the emotional consequences) do not stem directly from A (the adversity) but from B (your beliefs about the adversity). The sergeants work through a series of professional and personal adversities with the goal of being able to separate the adversity from the beliefs, drives, and consequences that they create (Seligman 2011, 167).

The second set of skills focuses on explanatory styles and patterns of thinking that can either heighten or hinder performances. The training goes through common thinking traps and how they apply to various situations. They review the ones that are the most common to the Soldiers and show they affect performances. In this section, Reivich brings the sergeants face to face with their own “icebergs”. Icebergs, according to Reivich, are deeply held beliefs that often lead to extreme emotional reactions. The sergeants then go through additional training that allows them to identify icebergs, determine if they are still meaningful, determine if they are accurate to the situation, if it is overly rigid, and finally if it is useful (Reivich, Seligman, and McBride 2011, 28). The iceberg section of the module then leads into the energy management (making sure a Soldier has various strategies to manage their stress) and problems solving (six step modules on identifying contributing causes of problems and possible strategies).

The final area that this module trains on is catastrophic thinking and how to deal with it. Reivich defines catastrophic thinking as ruminating about irrational worst-case outcomes. They use a three step model which includes; capturing catastrophic thinking, generating best case possibility, and identifying most likely outcomes. After the outcomes are identified, the training then teaches Soldiers how to develop a plan for

coping with the situations. The results are that a Soldier can determine the difference between a catastrophizing thought process versus a rational contingency plan (Reivich, Seligman, and McBride 2011, 29).

Once the contingency planning has been taught, the training for catastrophic thinking takes a step back and looks at how to fight against counterproductive thoughts before they can become catastrophic icebergs. Challenging these counterproductive thoughts is not about replacing every negative thought with a positive one, rather it enables focus on the immediate situation and to worry about that and not to continue speculation until further evidence can be obtained. Finally, to help combat counterproductive thoughts, the sergeants are asked to keep a “three blessings” journal. Cultivating gratitude for the “blessings” is a way to help to challenge counterproductive thoughts by reminding Soldiers of the good things that they have (Reivich, Seligman, and McBride 2011, 29).

The third module in the MRT program is identifying character strengths. In this module, the sergeants are asked to take an online “Values in Action Signature Strength Survey” identify their 24 character strengths in order (Seligman 2011, 171-172). Once all of the strengths are identified Reivich looks for patterns of strengths around the room and groups those individuals together. The sergeants get together in these small groups and discuss the strengths as they pertain to their leadership styles. The focus then becomes using these strengths to overcome given challenges. By the end of this module, according to Reivich, the sergeants are aware of their strengths and how they can use them as leaders and with family members. They will also be able to identify strengths in others

and how to use others various talents to complete missions (Reivich, Seligman, and McBride 2011, 29-30).

The final module in the MRT program is themed strengthening relationships. The relationship building will be between other Soldiers and their family at home. The training teaches three skills: active constructive responding, praise, and communication styles. This module is supposed to provide the Soldiers with tools to help build relationships. The ultimate goal for these skills is positive communications.

The training teaches the difference in various types of responses and what their effects are. The types of responses that they go over is active constructive (responses with authentic and enthusiastic support), passive constructive (understated support), passive destructive (ignoring the event), and active destructive (pointing out the negative aspects of the event). The sergeants will role-play these responses and are trained to focus on what was said and how it was delivered. They are then given a worksheet to help them reflect on how to use their signature strengths to respond.

The final part of this module is the sergeants are taught assertive communications. They are taught how to identify the style communications that are being used and how the message is conveyed to the listener. The sergeants are taught a five step model for assertive communications. The steps are: identify and understand the situation, describe the situation objectively and accurately, express concerns, work toward an acceptable change, and list the benefits to the situation. The final exercise is the sergeants will role play these techniques to help emphasize exploring styles of communications they can use. Following the completion of this module, the sergeants will spend the next three

days preparing their skills to take back to their units, which will conclude the MRT course and certify them as MRTs (Reivich, Seligman, and McBride 2011, 30-31).

Criticisms of the MRT are largely about the effectiveness of the training itself and the trainers. Dr. Eidelson outlines these ideas in “Does Comprehensive Soldier Fitness Work? CSF Research Fails the Test,” that CSF has not yet been proven to be effective for training resiliency, and therefore is still considered an experiment, despite its label of training (Eidelson, Pilisuk, and Soldz 2011). Largely among his other points Eidelson has issues with the MRT as the CSF fails to look at potential risks for adverse effects (Eidelson and Soldz 2012).

Eidelson compares the CSF to the Drug Abuse Resistance Education program of the 1990s. Drug Abuse Resistance Education was supposed to be designed to reduce drug, alcohol, and cigarette use. The results were that Drug Abuse Resistance Education rarely had any of its desired effects. Even more alarming, was that the results of studies that were conducted with the Drug Abuse Resistance Education program showed an increase in alcohol and cigarette use in comparison to the controls (Eidelson, Pilisuk, and Soldz 2011).

He argues that CSF has the same potential risks to Soldiers who actually suffer from PTSD. The research for the CSF was designed for middle school students, college students, and adults who more than likely will not experience anything that would cause them to have that level of PTSD. He claims that CSF does not take into account the complexity of PTSD, and treats it like it is merely a bad case of depression and anxiety. The CSF could potentially trigger PTSD or give a Soldier with it an improper strategy that would only serve to make it worse (Eidelson, Pilisuk, and Soldz 2011).

Another concern that was raised was that of the instruction. Doctors, who had spent years researching and developing their knowledge base on psychology and its effects, were trying to impart that wisdom to a group of Soldiers who are not required to have any education higher than a GED [General Education Development] in eight days, so they can teach others who know even less about resiliency than they do. Civilian teachers are usually required to have at least a degree in order to teach.

While the last three days of the training are for practicing their the new found MRT skills, the sergeants are not a highly trained research staff who are trained to interpret the results of the CSF, or even know when it is doing more harm than good. If this is the case, then the CSF should, according to Eidelson, be raising ethical concerns with the American Psychology Association (Eidelson, Pilisuk, and Soldz 2011).

Summary

From the MHAT reports from Iraq and Afghanistan to the Master Resiliency Training program at UPENN, the CSF has had a lot of research that has contributed to its development. No research is without its criticism and the CSF controversial approach to its development has their share of critics as well. There is some bias in every experiment and study, however the point is to minimize as much of it as possible in order to produce scientifically meaningful results. The CSF has cost the Army upwards of a quarter of a billion dollars, which the scientific community doubts, its validity.

The MHAT reports are the first set of research that went into the CSF development. These reports start to shape the picture with their findings, however they fall victim to the ecological fallacy, that every Soldier is the same and can be treated that way. The MHAT then leads to the development of the CSF, which was denied any

additional control trial before being implemented. The three pieces of the CSF were developed with existing civilian research which was converted within 60 days for military use.

The GAT is an online self-assessment survey that compares a Soldier's resiliency level based upon the five pillars to all of the other Soldiers in the Army. The results are supposed to determine how resilient they are. The GAT is mandatory every year a Soldier serves and if not completed, is addressed with the Soldier's chain of command. The GAT scores then refer a Soldier to training in what areas they are weak in. Critics argue that the GAT does not measure what it claims to and that improving scores does not necessarily make a Soldier more resilient. Also the GAT is reliant on a Soldier's commitment to becoming more resilient, and not just answering the questions to avoid additional training.

Following the GAT, a Soldier is supposed to conduct online courses in with each of the domains, in order to help bring up the Soldier's resiliency scores in the domains that they were determined weak in by the GAT. This online training could include one or all of the modules that exist for each of the domains. The modules are online and draw criticism as they are advanced concepts that a Soldier is basically self teaching, which may lead them to the different conclusions. If the Soldier has any additional questions though, they are supposed to turn to their UPENN trained MRTs.

The MRTs go to school for eight days at UPENN and have various satellite courses at various posts. The first five days are designed to walk the sergeants that are taking the course through the four modules of the course. The first module of the MRT training teaches the sergeants the course's core competencies and what resiliency is. The

second module teaches the sergeant's how to build mental toughness. The third module shows the sergeants how to recognize and use strengths and weaknesses. The last module that is taught is how to strengthen relationships with other Soldiers and their families.

The critics discuss the ideas that the UPENN resiliency program, that has been taught at elementary, middle, and high schools, have only shown mixed results of actually building resiliency. The MRT program was originally designed for civilian teachers and not Soldiers in combat. The final argument is that the sergeants who are chosen to be MRTs are not as qualified as they need to be in order to teach such a potentially delicate subject.

With the cumulative amount of data, from the MHAT research to the MRT program, the CSF has seen controversy since its inception. While there is always some level of bias in each experiment, it is clear to see that the CSF suffers from numerous biases or at the very least a number of unanswered questions. One point remains prominent, if the CSF can ever reach the potential for what its architects designed it to do, then it will truly be revolutionary.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The initial research question this study was trying to answer was whether or not there was significant research biases that were not mitigated in the research used to develop the CSF program. Based upon the analysis of the major research that was used in the CSF development, it is reasonable to say that significant research biases were present in some of the major research that was used to develop the CSF.

In the original MHAT research, a number of confounding variables were found that could have a profound effect on the outcomes of the studies. The measurement biases and the prolific use of the ecological fallacy, that assumed that every Soldier was the same. These biases lead to recommendations which were based on correlations and not necessarily causes, which in turn became important assumptions about deployed Soldiers and their mental health. Within the research for the GAT, a number of confounding and measurement biases are significant enough in the GAT which will hamper its ability to accurately measure a Soldier's resiliency. Following the GAT, the online modules and the MRT possibly have measurement biases as well.

The first selection of research that this study looked at was the cumulative reports of the MHATs and their findings in Iraq. Starting with the initial MHAT, the sampling methodology showed clear sampling biases and unmitigated confounding variables occurred. The most prominent sampling bias was the samples were not randomly selected. The samples were chosen by unit and by the chain of commands. Aside from whether or not the surveys were taken voluntarily, this arguably would not have been an

issue, if this type of sampling did not lead to additional confounding factors that threaten the validity of the results. The most easily identifiable confounding factors come from the MHAT's assumption that all Soldiers are the same (ecological fallacy) and therefore can be surveyed in the field and that these surveys would yield moderately accurate results. This is clearly not the case.

The best example of the sampling biases occurs when MHAT II reports a decrease in reported number of acute stress from OIF I only to have MHAT III say that there was an 11 percent increase from OIF II but was the same as OIF I. This could easily be explained by the different rotations in and out of Iraq. The MHATs were sampling the same units at times and different units at other times. OIF I had 4th ID as the major land component and many others of the same units. By OIF II the 3rd ID was now the major land component only to rotate back with 4th ID in OIF III again. It is easy to see that they were sampling the same units again by OIF III, which explains the acute stress levels being at the same levels as in OIF I.

Among other sampling biases, there were plenty of confounding variables that were not mitigated in those reports as well. The most significant one was the environment. As stated previously, Iraq had different levels of danger and stressors, depending upon where a unit was and when they were there. It is also no secret that fearing for your life causes stress as well. Therefore location in country, time in country, and threat level are fairly significant variables that can sway the results of a sample's answers.

An example of this could be seen by the results of how quickly multiple deployers had acute stress symptoms, as reported earlier in MHAT III's report. It is presumed that

they probably would not have reached those levels so quickly if the environment was an equally dangerous threat shared by all. Because this stress cannot be applied equally, then it stands to reason that either randomizing the samples is needed, so that everyone who was deployed to Iraq during that timeframe has an equal chance of being selected or selecting Soldiers from the same site every time would be ways of mitigating this bias.

However these mitigations did not occur.

Another set of biases that this research suffers from is from their measurements. The MHATs despite saying a number of different times that their studies are only cross sectional samples go on to use regression analysis and frequency to justify their recommendations. Regression analysis is for use with correlations. Correlations do not mean that there is statistical data to prove causality. This is like saying every time it gets cold, it will snow. This type of analysis can only show the relationship and not accurately predict snow.

The aforementioned acute stress example illustrates these biases as well. If the units are rotating in and out and the environment is constantly changing, it stands to reason that the MHAT could not possibly get accurate measurements that could be predictive in nature. There are simply too many other things that would confound their results. Therefore their recommendations for anything other than the systems aspects of their reports would suffer from this bias as well. This means that any progress that may have been measured and reported, could be just a coincidence.

The MHAT reports and their analysis then set the framework for General Casey, despite their inaccuracies. Casey ordered Brigadier General Cornum and Dr. Seligman to create the CSF and report back to him in 60 days. In those 60 days, Cornum worked very

hard to organize and created the CSF. With such a short period of time, the CSF research would suffer from their share of biases as well.

The first step in a Soldier's journey to becoming indomitable is to take the GAT. The GAT however suffers from the ecological fallacy which then lends itself to a couple of major measurement biases. The GAT assumes that all Soldiers are equal and can therefore compare them against each other. As mentioned in the research chapter, this is entirely false. The higher a Soldier goes up in rank, the more responsibilities they receive. They also have fewer peers as they are promoted. This means that the resiliency of the majority of the personnel that a General Officer is compared against would be nowhere near his demographic, so the comparison would almost be completely irrelevant to him.

With this in mind, having looked at the initial issues that originally concerned Casey, it can be concluded that the GAT suffers from the additional measurement bias as pointed out by Dr. Eidelson. Eidelson recounts his claims that an increase in scores on the GAT does not necessarily mean that there is an increase in resiliency because the GAT is not really measuring for it. He also contends that the GAT fails to test significant factors that make up PTSD, clinical depression, and some of the other mental health concerns it was supposed to help identify (Eidelson and Soldz 2012, 5-7).

After the GAT, while there is a number of criticisms, most of the work that went into the training modules and the MRT program was best described by Dr. Cacioppo in his article in *American Psychologist* as the CSF really was transitional research at best, which was research that still needed to be confirmed (Cacioppo, Reis, and Zautra 2011). While the GAT and the MHAT research has clear research biases, the training modules only really suffer from measurement biases and only really in the sense that the research

had never been conducted on Soldiers deployed in combat. This means that the research may not be measurable to the population that it was converted for; however the original research was fairly sound. Other confounding variables may yet emerge later on, but as for the training aspects of the CSF, while there are concerns, there is no evidence to say that there were biases that were not mitigated.

There are still an alarming number of ethical concerns over the CSF and its training modules. If none of this has been proven to work on deployed Soldiers, then Eidelson's argument about whether or not such training in the hand of amateurs could in fact do more harm than good remains relevant (Eidelson and Soldz 2012). Those arguments will become more or less relevant as the CSF development continues over the next 10 years.

Recommendations

After the research and analysis the following recommendations can be made:

1. When displaying results, it is important to understand the limitations of the research that was conducted. Claims were asserted to be considered true because of how the study's results were presented, which in turn led to a number of assumptions also thought to be true, which was not necessarily the actual situation. Therefore, it is recommended that the studies openly address the limitations of their research that the researcher is aware of. In the studies that did this, the study's results were not scrutinized by those limitations for threats to the research's validity.
2. Randomized controlled trials must be conducted on Soldiers when converting over civilian research are recommended prior to the implementation of any Army program.

3. Mitigation of confounding variables is the key to validity, future studies should identify and then control as many of these variables as possible throughout a study, or acknowledge the limitations of the studies if control is not possible.

4. The concept of what the CSF was supposed to be and do was monumental. Often these types of tasks have issues with their translation from theory to reality. For example, communism should work great according to its theorists, but fails to account for human biases that affect it, as does the CSF. A recommendation to ensure the effectiveness of a program like the CSF is to implement it incrementally and ensure the data matches what should be predicted. Science grows incrementally and therefore patience is a virtue.

5. The CSF worked very actively to take away the stigma of going to see a behavioral healthcare provider and therefore decided to take the program away from the chaplains and put it in the hands of the sergeants and online training. The training lacks interpersonal connections of a professional now. A final recommendation is that the entire program should be put back into the hands of the Chaplain Corps. As chaplains have confidentiality regulations protecting them, Soldiers can actually tell a chaplain what their real feelings are. The chaplains have had more training than sergeants in much of the same areas that the CSF covers and therefore they would be a natural fit to take the training. A movement of the CSF to the Chaplain Corps would enhance the CSF.

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